

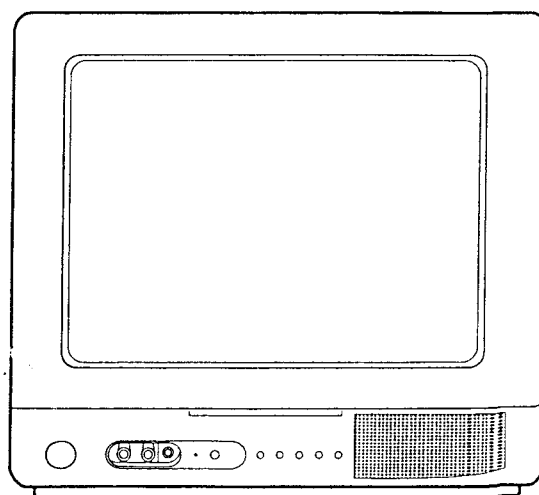
DAEWOO

Service Manual

37 / 51 / 55 Cm Mono Colour Television

CHASSIS : CP-375

MODEL : 20A5T



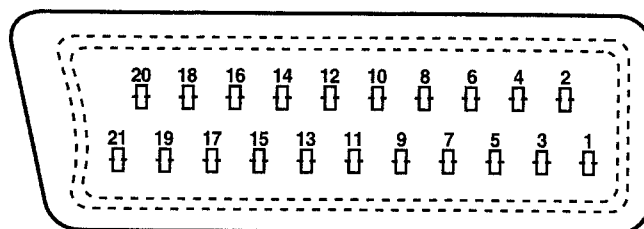
DAEWOO ELECTRONICS CO., LTD.

■ Specifications

CRT	14" : A34JLL90X01,A34EAC01X06,A34EFU13X01 (OEC) (PHILIPS) (POLKOLOR) 20" : A48JLL90X02,A48EEV33X01 (OEC) (POLKOLOR) 21" : A51JSW90X02,A51EAL55X01,A51EBV13X09 (OEC) (PHILIPS) (POLKOLOR)
System	TF : PAL - B/G for West Europe TA : PAL - B/G, SECAM-L/L' for France TU : PAL - I for U.K TI : PAL - I/I for Ireland TK : PAL/SECAM - B/G, D/K, NTSC-3.58/4.43(play back) for East Europe & CIS
Main Voltage	230V AC, 50Hz
Power Consumption	Stand-by mode : 8 Watts Normal operating mode : 14" = 39Watts 20",21" = 49 Watts
Sound output	1.5 Watts, 10 % THD at RF 60 % mod. (1 Speaker model) 2 + 2 Watts, 10 % THD at RF 60 % mod. (2 Speaker model)
Speaker	3W 16 ohm x 1 EA (1 Speaker model) 3W 8 ohm x 2 EA (2 Speaker model)
Antenna Impedance	75 ohm unbalanced input
Tuning system	VS(voltage synthesis) tuning
Tuner	3303KHC (TF, TA, TK, TI Model) BAND I : CH2 - CH4 BAND III : CH5 - CH12 CABLE BAND : S1' - S3' , S1 - S20 HYPER BAND : S21 - S41 BAND IV, V : CH21 - CH69 DT2-IV17D (TU Model) BAND IV, V : CH21 - CH69
Number of program	70 programs
Aux. Terminal	21 pin EURO-SCART jack (AV input, TV output, RGB input, S-VHS input) RCA type AV input jack (option) Headphone jack (3.5 mm ϕ) (option)
Remote controller	R-28B03 with 2 "AA" type batteries
Teletext (option)	8 pages memory TOP & FLOF - West option :English, German/Dutch/Flemish, French, Italian, Spanish/Portuguese, Swedish/Finnish/Danish, Czech/Slovak - East option : Polish, Czech/Slovak, Rumanian, Hungarian, Servo-croat, German/Dutch/Flemish, French, Italian - Turkish option : Turkish, English, German/Dutch/Flemish, French, Italian, Spanish/Portuguese, Swedish/Finnish/Danish - Cyrillic option: Russian, Lettish/Lithuanian, Estonian, Ukranian, Czech/Slovak, Servo-croat, English
OSD language	-East,West,Turkish Version : English,French,German,Italian,Spanish -Cyrillic Version : Russian, English, German -Non-Teletext Version : English,French,German,Italian,Spanish, Russian

*** 21 PIN EURO-SCART**

PIN	Signal Designation	Matching Value
1	Audio Out(linked with 3)	0.5Vrms,Imp<1 k Ω (RF 60% MOD)
2	Audio In(linked with 6)	0.5Vrms,Imp>10 k Ω
3	Audio Out(linked with 1)	0.5Vrms,Imp<1 k Ω (RF 60% MOD)
4	Audio Earth	
5	Blue Earth	
6	Audio in (linked with 2)	0.5Vrms,Imp>10 k Ω
7	Blue in	0.7Vpp \pm 3 dB,Imp75 Ω
8	Slow(Function) Switching	TV:0-2V,PERI:9.5-12V,Imp>10 k Ω
9	Green Earth	
10	NC	
11	Green In	0.7Vpp \pm 3 dB,Imp75 Ω
12	NC	
13	Red Earth	
14	NC	
15	Red In, C In	0.7Vpp \pm 3 dB,Imp75 Ω
16	Rapid(Blanking) switching	Logic 0:0-0.4V,Logic 1:1-3V,Imp 75 Ω
17	Video Earth	
18	Rapid Blanking Earth	
19	Video Out	1Vpp \pm 3 dB,Imp75 Ω
20	Video In, Y In	1Vpp \pm 3 dB,Imp75 Ω
21	Common Earth	



■ Safety Instruction

WARNING: Only competent service personnel may carry out work involving the testing or repair of this equipment.

■ X-RAY RADIATION PRECAUTION

1. Excessive high voltage can produce potentially hazardous X-RAY RADIATION. To avoid such hazards, the high voltage must not exceed the specified limit. The nominal value of the high voltage of this receiver is 22-23 kV (14"), 25-26 kV (20", 21") at max beam current. The high voltage must not, under any circumstances, exceed 27.5 kV (14", 20"), 29.0 kV (21").
Each time a receiver requires servicing, the high voltage should be checked. It is important to use an accurate and reliable high voltage meter.
2. The only source of X-RAY Radiation in this TV receiver is the picture tube. For continued X-RAY RADIATION protection, the replacement tube must be exactly the same type tube as specified in the parts list.

■ SAFETY PRECAUTION

1. Potentials of high voltage are present when this receiver is operating. Operation of the receiver outside the cabinet or with the back board removed involves a shock hazard from the receiver.
 - 1) Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment.
 - 2) Discharge the high potential of the picture tube before handling the tube. The picture tube is highly evacuated and if broken, glass fragments will be violently expelled.
2. If any Fuse in this TV receiver is blown, replace it with the FUSE specified in the Replacement Parts List.
3. When replacing a high wattage resistor (oxide metal film resistor) in circuit board, keep the resistor 10mm away from circuit board.
4. Keep wires away from high voltage or high temperature components.
5. This receiver must operate under AC230 volts, 50Hz. NEVER connect to DC supply or any other power or frequency.

■ PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this have special safety-related characteristics. These characteristics are often passed unnoticed by a visual inspection and the X-RAY RADIATION protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this manual and its supplements, electrical components having such features are

identified by designated symbol on the parts list. Before replacing any of these components, read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create X-RAY Radiation.

Alignment Instructions

1. AFT

1.1 Standard B/G,D/K,I and L

- 1) Set a Signal Generator with
 - RF FREQUENCY = 38.9 MHz,
 - RF OUTPUT LEVEL = $80^{\circ} \pm 5$ dBuV
 - System = PAL / SECAM - B/G, D/K, I
- 2) Connect the Signal Generator RF Output to P101 (Tuner IF Output).
There must be no signal input to the tuner.
- 3) Press the "AFT" KEY and wait until the TV screen display "AFT OK".

1.2 Standard SECAM-L' (France VHF-Low)

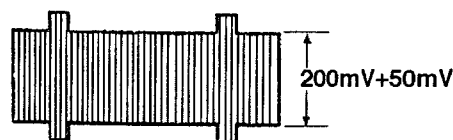
- * Above mentioned "1.1" adjustment has to be done in advance.
- 1) Set a Signal Generator with
 - RF FREQUENCY = 34.2 MHz,
 - RF OUTPUT LEVEL = $80^{\circ} \pm 5$ dBuV
 - System = SECAM - L'
- 2) Connect the Signal Generator RF Output to P101 (Tuner IF Output).
There must be no signal input to the tuner.
- 3) Press the "L' AFT" KEY and wait until the TV screen display "L AFT OK".

2. AGC

- 1) Set a Pattern Generator with RF LEVEL $63^{\circ} \pm 2$ dBuV .
- 2) Connect a OSCILLOSCOPE PROBE to P101 (TUNER AGC INPUT).
- 3) Adjust AGC UP/DOWN KEY the voltage drop 1V dc over below its maximum voltage.

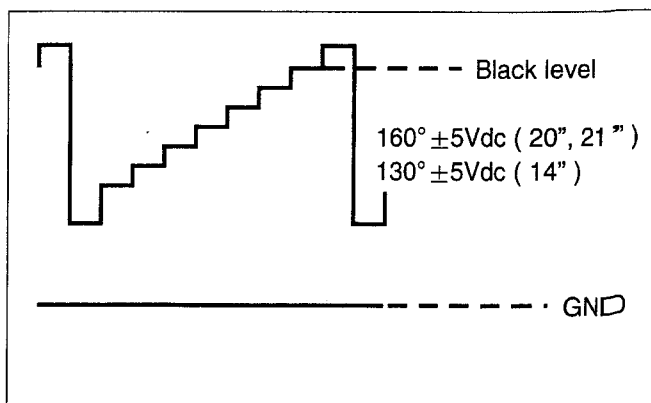
* Alternative Method

- 1) Set a Pattern Generator with
 - RF LEVEL $80^{\circ} \pm 5$ dBuV
 - PAL CROSSHATCH
(without SOUND CARRIER)
- 2) Connect a OSCILLOSCOPE
(Bandwidth ≥ 100 MHz) PROBE
to P101 (TUNER IF OUTPUT).
- 3) Use AGC UP/DOWN KEY to obtain
an envelop amplitude $200 + 50$ mVp-p.



3. SCREEN

- 1) Apply a COLOR BAR pattern signal.
- 2) Set the CONTRAST, BRIGHTNESS to MAX, COLOR to MIN.
- 3) Set the R,G,B LEVEL to CENTER (31/63) with R,G,B UP/DOWN KEY.
- 4) Connect a OSCILLOSCOPE PROBE to P906 (CRT CATHOD R, G, B).
- 5) Adjust the SCREEN VOLUME on FBT such that the highest black level voltage $160^{\circ} \pm 5$ Vdc (20", 21"), $130^{\circ} \pm 5$ Vdc (14").



4. WHITE BALANCE

- 1) Set the TV to NOR I mode.
- 2) Set the R,G,B LEVEL to CENTER with R,G,B UP/DOWN KEY .
- 3) Adjust the R,G,B UP/DOWN KEY of the other color which did not appear on the screen to obtain WHITE.

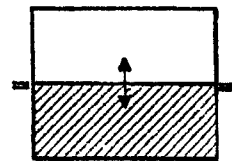
5. FOCUS

- 1) Apply a RETMA PATTERN signal.
- 2) Adjust the FOCUS VOLUME on FBT to obtain optimal resolution.

6. GEOMETRY

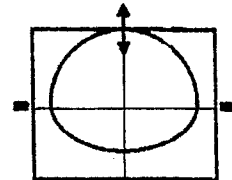
6.1 VERTICAL CENTER

- 1) Set the TV to NOR I mode.
- 2) Pressing the V-SIZE UP/DOWN KEY, the lower half of the screen is blanked.
- 3) Adjust the border line of blanked picture coincident with the mechanical center marks of the CRT using the V-SIZE UP/DOWN KEY.



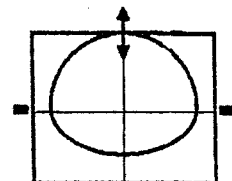
6.2 VERTICAL SIZE

- * The VERTICAL CENTER adjustment has to be done in advance.
- 1) Apply a RETMA PATTERN signal.
 - 2) Set the TV to NOR I mode.
 - 3) Adjust the upper part of the picture with the V-SIZE UP/DOWN keys.



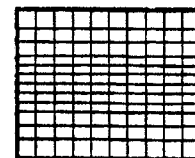
6.3 VERTICAL SLOPE

- * The VERTICAL SIZE adjustment has to be done in advance.
- 1) Apply a RETMA PATTERN signal.
 - 2) Adjust the lower part of the picture with the V-SLOPE UP/DOWN keys.



6.4 VERTICAL S-CORRECTION

- 1) Apply a CROSSHATCH PATTERN signal.
- 2) Adjust the S-COR UP/DOWN KEY to obtain the same distance between horizontal lines.



6.5 HORIZONTAL CENTER

- 1) Apply a RETMA PATTERN signal.
- 2) Adjust picture centering with CENTER LEFT/RIGHT keys.

If EEPROM (I703) has been changed ;

- Option data has to be changed and
- all alignment function has to be readjusted .

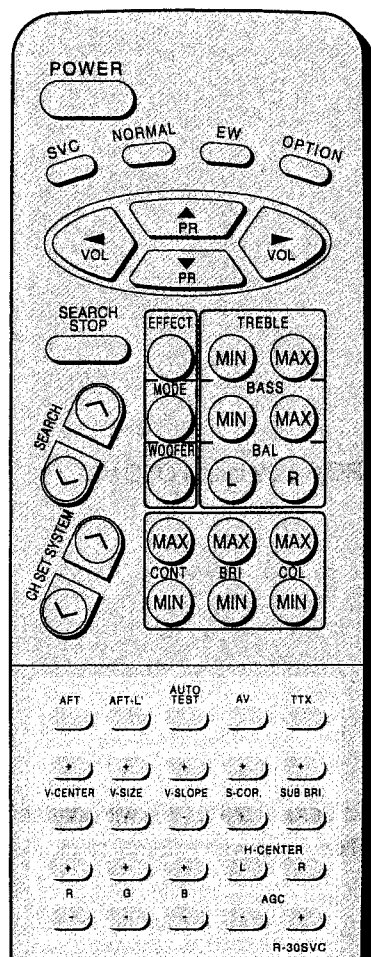
* Option

	Initial state (Blank EEPROM)	TA (FRANCE)	TU (U.K)	TF,TK (OTHERS)	Remark (u-COM Version)
AV	AV2	AV2	AV2	AV2	
BAND	3 BAND	3 BAND	1 BAND	3 BAND	
FRANCE	OFF	ON	OFF	OFF	
N3.58	OFF	OFF	OFF	OFF	DW5255M2-3 DW5255RM1-2
ATS	ON	ON	ON	ON	DW5255M4 DW5255RM3

* The initial state of adjustment are as follows;

- V-Center, V-Slope V-Size, H-Center, R, G, B, AFT = Center (30/64 - 33/64)
- S-Correction = 00/64
- AGC = 10/64

*Service Remocon



■ IC Description

DW5255M*(Micro-controller & West/East Teletext Decoder)

DW5255RM*(Micro-controller & Cyrillic Teletext Decoder)

=SDA5255-A* (SIEMENS Type No.)**

(1) General Description

The TDA5255 contains a slicer for VPS and TTX, an accelerating acquisition hardware module, a display generator for "LEVEL 1" TTX data and a 8 bit u-controller running at 333 nsec cycle time.

The controller with dedicated hardware guarantees flexibility, does most of the internal processing of TTX acquisition, transfers data to/from the external memory interface and receives/transmits data via I2C and UART user interfaces.

The Slicer combined with dedicated hardware stores TTX data in a VBI 1Kbyte buffer.

The u-controller firmware does the total acquisition task (hamming- and parity-checks, page search and evaluation of header control bits) once per field.

(2) Feature

• Acquisition:

- feature selection via special function register
- simultaneous reception of TTX and VPS
- fixed framing code for VPS and TTX
- programmable framing code window for TTX
- Acquisition during VBI
- direct access to VBI RAM buffer
- Acquisition of packets x/26, x/27, 8/30 (firmware)
- assistance of all relevant checks (firmware)
- 1-bit framing-code error tolerance (switchable)

• Display:

- features selectable via special function register
- 50/60 Hz display
- level 1 serial attribute display pages
- blanking and contrast reduction output
- 8 direct addressable display pages
- 12 x 10 character matrix
- 96 character ROM (standard G0 character set)
- 143 national option characters for 11 languages
- 288 characters for X/26 display
- 64 block mosaic graphic characters
- 32 free addressable characters for OSD in expanded character ROM + 32 inside OSD box
- double height (TOP/BOTTOM)
- conceal/reveal
- transparent foreground/background -inside/outside of a box
- cursor (colour changes from foreground to background colour)
- flash (flash rate 1s)
- programmable horizontal und vertical sync delay
- hardware assisted fast display page erase
- full screen background colour in outer screen

• Synchronization:

display synchronization to sandcastle or Horizontal Sync (HS) and Vertical Sync (VS) with startstop-oscillator ▶ r
display synchronization to sandcastle or Horizontal Sync and Vertical Sync with external clock
independent clock systems for acquisition, display and controller

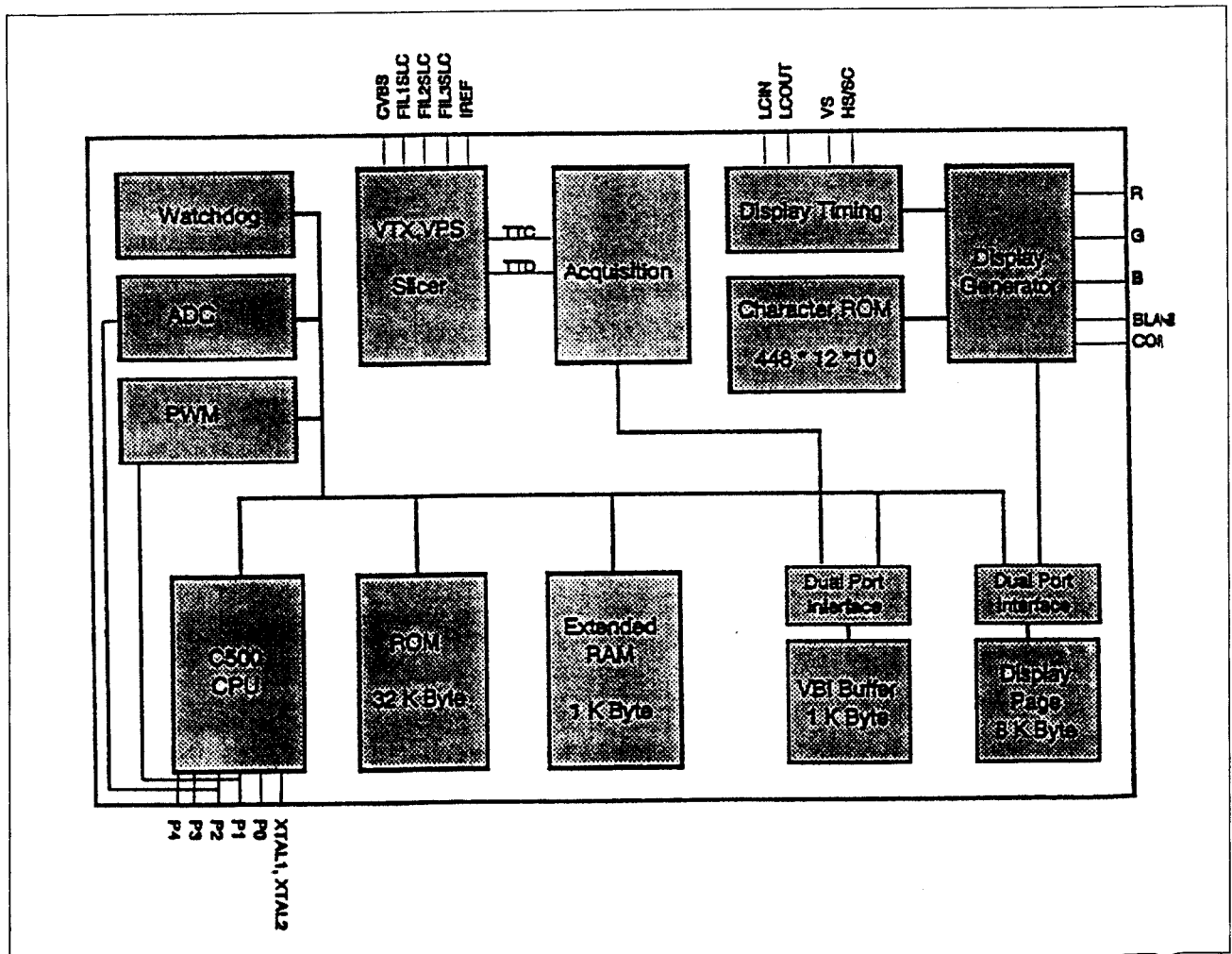
• **Controller:**

- 8 bit configuration
- 18 MHz internal clock
- 0.33 us instruction cycle
- eight 16-bit data pointer registers (DPTR)
- two 16-bit timers
- watchdog timer
- serial interface (UART)
- 256 bytes on-chip RAM
- 1 Kbyte on-chip extended RAM (access via MOVX)
- 8 Kbyte on-chip ACQ-buffer-RAM (access via MOVX)
- 6 channel 8-bit pulse width modulation unit
- 2 channel 14-bit pulse width modulation unit
- 4 multiplexed ADC inputs with 8-bit resolution
- one 8-bit I/O port with open drain output and optional I2C emulation
- two 8-bit multifunctional I/O ports
- one 4-bit port working as digital or analog inputs
- one 2-bit I/O port with optional address latch enable function

• **P-SDIP 52 package**

• **5 V supply voltage**

(3) Block Diagram



DW370M* (Micro-controller for Non-Teletext Model)

=TMS370C08A05 (TI Type No.)

=TMS370P08A05 (OTP device)

(1) General Description

The TMS370C08A05 devices are members of the cMCU370 family single-chip microcontrollers.

The cMCU370 family provides cost effective real-time system control through use of the PRISM methodology.

The PRISM methodology modular fabrication process integrates analog, digital, linear and power technologies on a single chip, thereby maximizing the total integration strategy.

The TMS370C08A05 devices are designed with the high-performance 8-bit TMS370C8 CPU.

Features of the 'C8 CPU and system module as implemented on this device include three CPU registers (stack pointer, status register, and the program counter), two external interrupts, reset, memory mapped control registers.

(2) Feature

- **Internal Memory Configurations**

- 16K-Byte ROM Program Memory
- 512-Byte RAM

- **Operating Features**

- Supply Voltage (VCC) 5 V ° ± 10%
- Input Clock Frequency 2, 20MHz
- Industrial Temperature Range

- **Device Integrity Features**

- Address Out-of-Range Reset
- Stack Overflow Reset
- Parallel Signature Analysis (CRC)

- **Two 16-Bit General Purpose Timer(T8A)**

Each Includes:

- 16-Bit Resettable Counters with individual 8-Bit Prescaler
- 2 PWM Channels or
- 2 Input Captures or
- 1 Input Capture and 1 PWM Channel

- **One 14-Bit PWM Module**

- 14-Bit Resettable Counters
- 14-Bit PWM Output Port

- **One 8-Bit PWM Module**

- 8-Bit Resettable Counters
- 8-Bit PWM Output Port with 12V Open Drain

- **OSD Module**

- Blanking/ Contrast reduction out
- Transparent Background
- Transparent Foreground
- Full Screen Background Color
- Controlled Color, Blink, Size, Smoothing, Fringe of Each lines of Character
- Two size of different Font 12x10 and 12x18 by Hard Masking
- OSD Window Display with 40x25 lines

- **8-Bit A/D Converter With 3 Inputs**

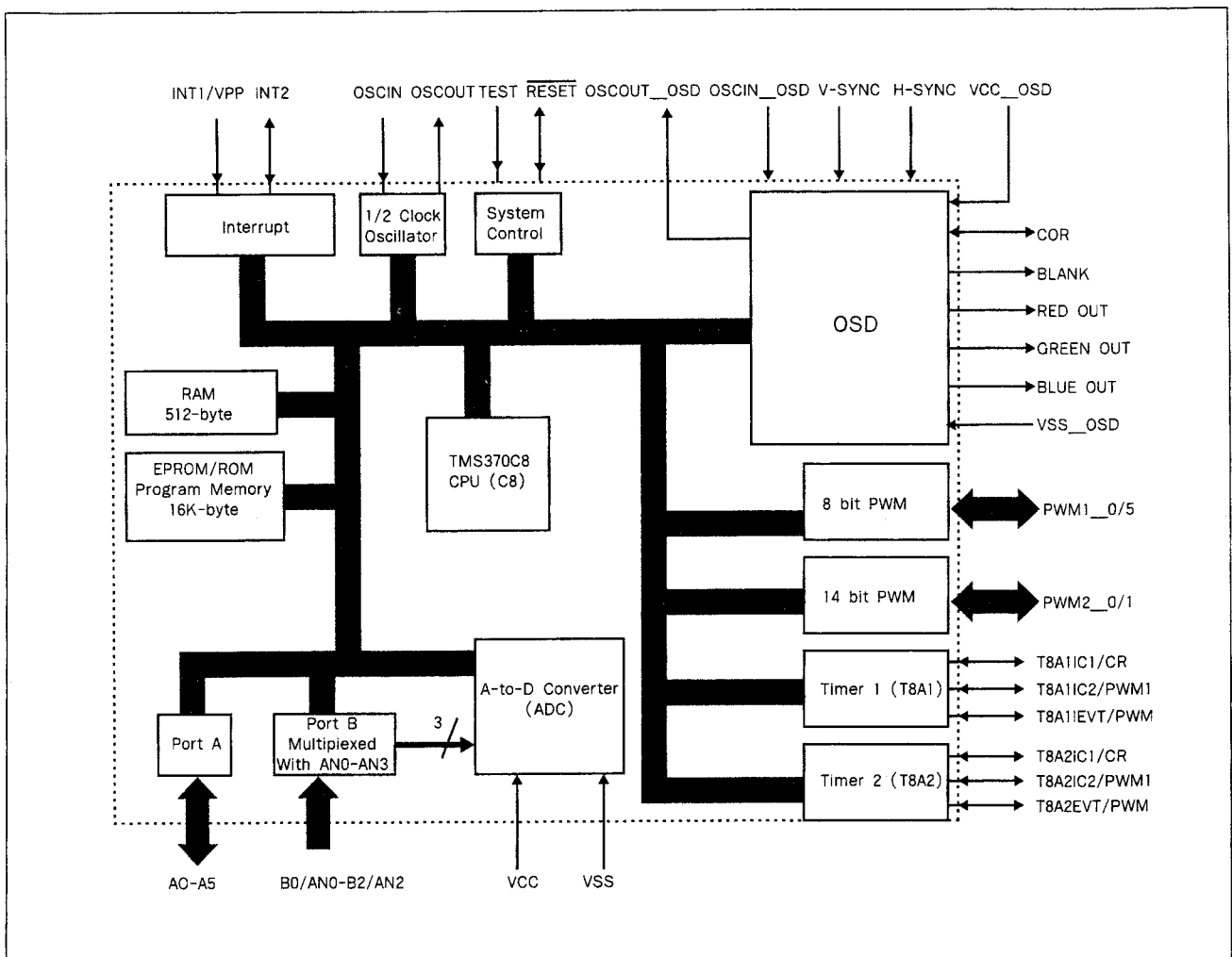
- Single or Dual Channel Operation
- Single or Continuous Conversion Modes

- **Flexible Interrupt Handling**

- Global and Individual Interrupt Masking

- 2 S/W Programmable Interrupt Levels
- 2 External Interrupt (1 Non-Maskable)
- Programmable Rising or Falling Edge Detect
- **09 CMOS Compatible I/O Pins**
 - All Peripheral Function Pins Software Configurable for Digital I/O
 - 6 Bidirectionals, 3 Input Pins
- **Plastic 42 YSDP Pins Package**

(3) Block Diagram



(4) Pin Description

* A : DW5255M*/DW5255RM*, B : DW370M*

Pin		Name		Symbol	Description
A*	B*	A*	B		
1	1	P3.1	T1IC1/CR	SYS	SECAM-L' OUT for switching SAW filter L9461 - SECAM-L' : H - SECAM- L : L
2	2	P0.7/Open Drain	A0	BUSSTOP	I2C BUS STOP IN for Computer controlled alignment in Factory (Active Low)
3	3	P0.6/Open Drain	A1	SDA	Serial data IN/OUT for I2C
4	4	P0.5/Open Drain	A2	SCL	Serial clock IN/OUT for I2C
5	5	P0.4/Open Drain	A3	OPTION	#5 #6 Teletext H H West Teletext L H East Teletext H L Turkish Teletext
6	6	P0.3/Open Drain	A4	OPTION	
7	7	P0.2/Open Drain	A5	OPTION	Auto search priority H : L/L' priority L : B/G priority
8	8	P0.1/Open Drain	PWM1-0/ Open Drain	OPTION	Not Used (Reserved)
9	9	P0.0/Open Drain	PWM1-1/ Open Drain	LED	LED drive OUT - Stand-by mode : H - Operating mode : L (IR reception : pulse)
10	10	VSS		VSS	ground
11	11	VCC		VCC	Power Supply
12	12	XTAL1	OSCIN	OSCIN	Input to inverting osc. Amplifier
13	13	XTAL2	OSCOUT	OSCOUT	Output of inverting osc. Amplifier
14	14	P4.0/ALE	PWM1-2/Open Drain		Not Used
15	15	RESET	RESET/Open Drain	RST	RESET IN (ACTIVE LOW)
16	16	P1.7/14BIT PWM	PWM2-0	VT	TUNING VOLTAGE OUT
17	17	P1.6/14BIT PWM	PWM2-1	SW	TV/AV &AM/FM SW.OUT for STV8225
18	18	P1.5/8BIT PWM	PWM1-3/Open Drain	F/SW	F/SW IDENT IN for stopping OSD display in RGB mode - H : TV /AV mode - L : RGB mode
19	19	P1.4/8BIT PWM	PWM1-4/Open Drain		Not Used
20	20	P1.3/8BIT PWM	PWM1-5/Open Drain	MUTE	AUDIO MUTE OUT
21	21	P1.2/8BIT PWM	TEST	GND	(Must be tied 0V for DW370M*)
22		P1.1/8BIT PWM			Not Used
23		P1.0/8BIT PWM			Not Used
24		VSSA		VSSA	Analog GND for Slicer
25		FIL3		FIL3	PLL Loop Filter I/O for Phase Shifting

Pin		Name		Symbol	Description
A*	B*	A*	B		
26		FIL2		FIL2	PLL Loop Filter I/O for TTX Slicing
27		FIL1		FIL1	PLL Loop Filter I/O for VPS Slicing
28		VCCA		VCCA	Analog Supply for Slicer
29		IREF		IREF	Reference Current for Slicer PLLs
30		CVBS		CVBS	CVBS IN
31		P2.3/8 bit ADC			Not Used
32	22	P2.2/8 bit ADC	B0/AN0/ADC	AGC	IF AGC INPUT for Auto Tuning System
33	23	P2.1/8 bit ADC	B1/AN1/ADC	KS	Local KEY SCAN IN
34	24	P2.0/8 bit ADC	B2/AN2/ADC	S/SW	S/SW IDENT IN for Automatic switching between TV/AV mode - H : AV / RGB mode - L : TV mode
35	25	VSS	VSS-OSD	VSS	Ground
36	26	P3.3/INT1	INT1	IR	REMOTE IR IN
37	27	VDD	VCC-OSD	VDD	Power Supply
38	28	LCIN	OSCIN-OSD	LCIN	CLOCK IN for OSD
39	29	LCOUT	OSCOUD-OSD	LCOUT	CLOCK OUT for OSD
40	30	P3.7/TXT I/O	T2EVT/PWM2	BL	BAND VHF-L OUT (Active High)
41	31	P3.6/RXD	T2IC2/PWM1	BH	BAND VHF-H OUT (Active High)
42	32	P3.5/T1	T2IC1/CR	BU	BAND UHF OUT (Active High)
43	33	P3.4/T0	T1EVT/PWM2	POWER	POWER CONTROL OUT
44	34	P3.2/INT0	INT2		Not Used
45	35	HS/SC	HSYNC	HSYNC	HOR. SYNC. IN (Active High)
46	36	P4.7/VS	VSNC	VSNC	VERT. SYNC. IN (Active High)
47	37	R		R	RED OUT
48	38	G		G	GREEN OUT
49	39	B		B	BLUE OUT
50	40	BLANK		BL	BLANK OUT
51	41	COR		COR	Not Used (CONTRAST REDUCTION OUT)
52	42	P3.0	T1C2/PWM1	EVEN/ODD	EVEN/ODD OUT for non-interlacing in TTX mode

CAT24C08P (E² PROM)

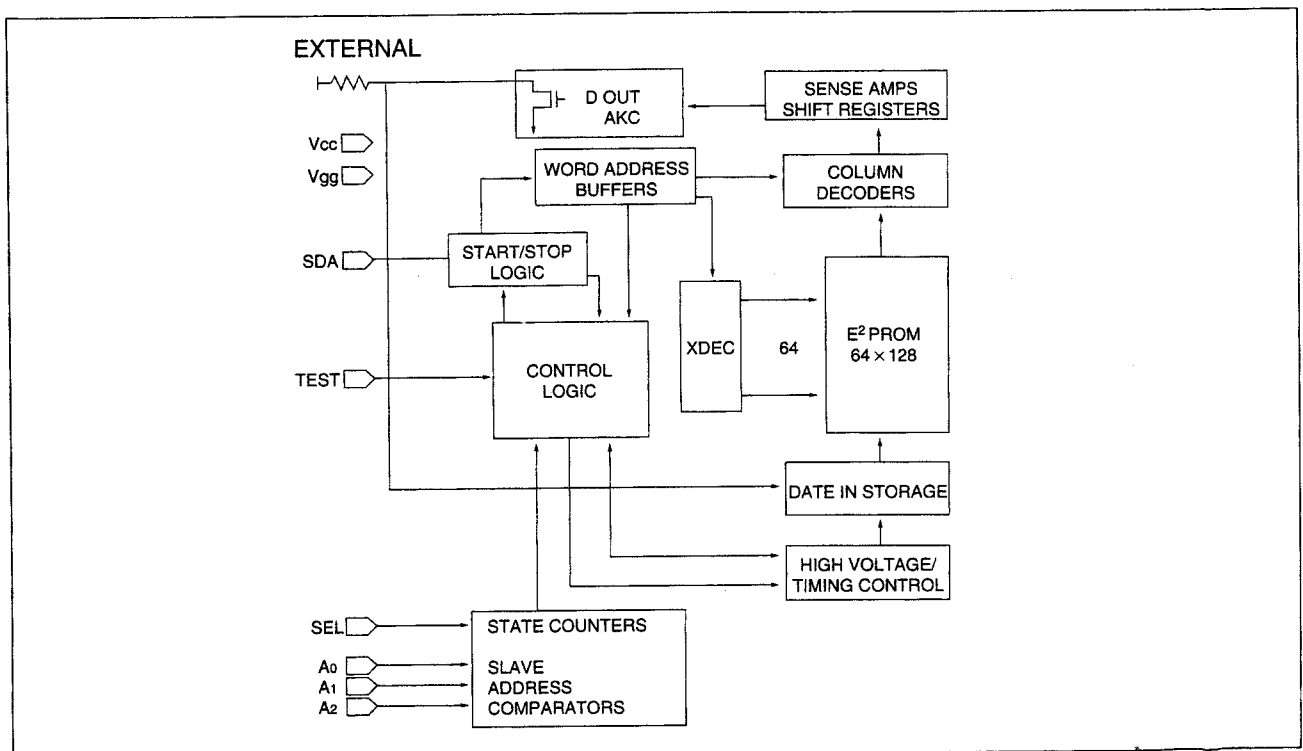
(1) Typical Features

- IC Bus compatible
- Low power CMOS Technology
- 16 Byte page write Buffer
- Self-Timed Write cycle with Auto-Clear
- 100,000 program/Erase cycles
- 100 Year Data Retention
- Optional High Endurance Device Available

(2) Description

The CAT24C08P is a 8K bit serial CMOS E² PROM internally organized as 1024x8bits. The CAT 24C08P features a 16 byte page write buffer.

(3) Block Diagram



(4) Pin Description

PIN	SYMBOL	DESCRIPTION
1-3	A0, A1, A2	Device Address Inputs
4	Vss	Ground
5	SDA	Serial Data/Address
6	SCL	Serial Clock
7	TEST	Connect to Vss
8	Vcc	+5V Power supply

TDA8374A (Single chip TV Processor for Negative modulation IF)

TDA8374 (Single chip TV Processor for Negative & positive modulation IF)

(1) General Description

The TDA8374(A) is I2C-bus controlled single chip TV processors which are intended to be applied in PAL/NTSC television receiver.

The IC is mounted in a S-DIL 56 envelope.

(2) Feature

• IF

- Vision IF amplifier with high sensitivity and good figures for differential phase and gain
- PLL demodulator with high linearity offering the possibility for (single standard) intercarrier stereo audio application .
- Alignment PLL via I2C
- [TDA8374] Multistandard IF with negative and positive modulation, switchable via I2C

• AUDIO

- Alignment free multi standard PLL audio demodulator (4.5 to 6.5 MHz.)
- Mono volume control

• Video

- Integrated luminance delay line
- Integrated chroma trap and bandpass filters (auto calibrated)
- Asymmetrical peaking circuit in the luminance channel
- Black stretching of non standard CVBS or luminance signals

• Colour

- SECAM interface for application with SECAM add-on TDA8395.

• RGB

- RGB control (brightness, contrast, saturation)
- Black current stabilization and white point adjustment

• Input / Output

- Flexible video source select with CVBS input for the internal signal and two external video inputs(one switchable for CVBS or Y/C).
- The output signal of the video source select is externally available (also as CVBS when Y/C input is used).
- External audio input.
- Linear RGB input with fast blanking.

• Synchronization and Deflection

- Horizontal synchronization with two control loops and alignment free horizontal oscillator.
- Slow start and slow stop of the horizontal drive output to enable low stress start-up and switch-off from the line circuit at nominal line supply voltage.
- Vertical count-down circuit for stable behavior with provisions for non-standard signals.
- Vertical geometry control.
- Vertical drive optimized for DC coupled vertical output stages.

• Control

- Full I2C bus control, as well for customer controls as for factory alignment.
- All automatic controls have an option for forced mode.

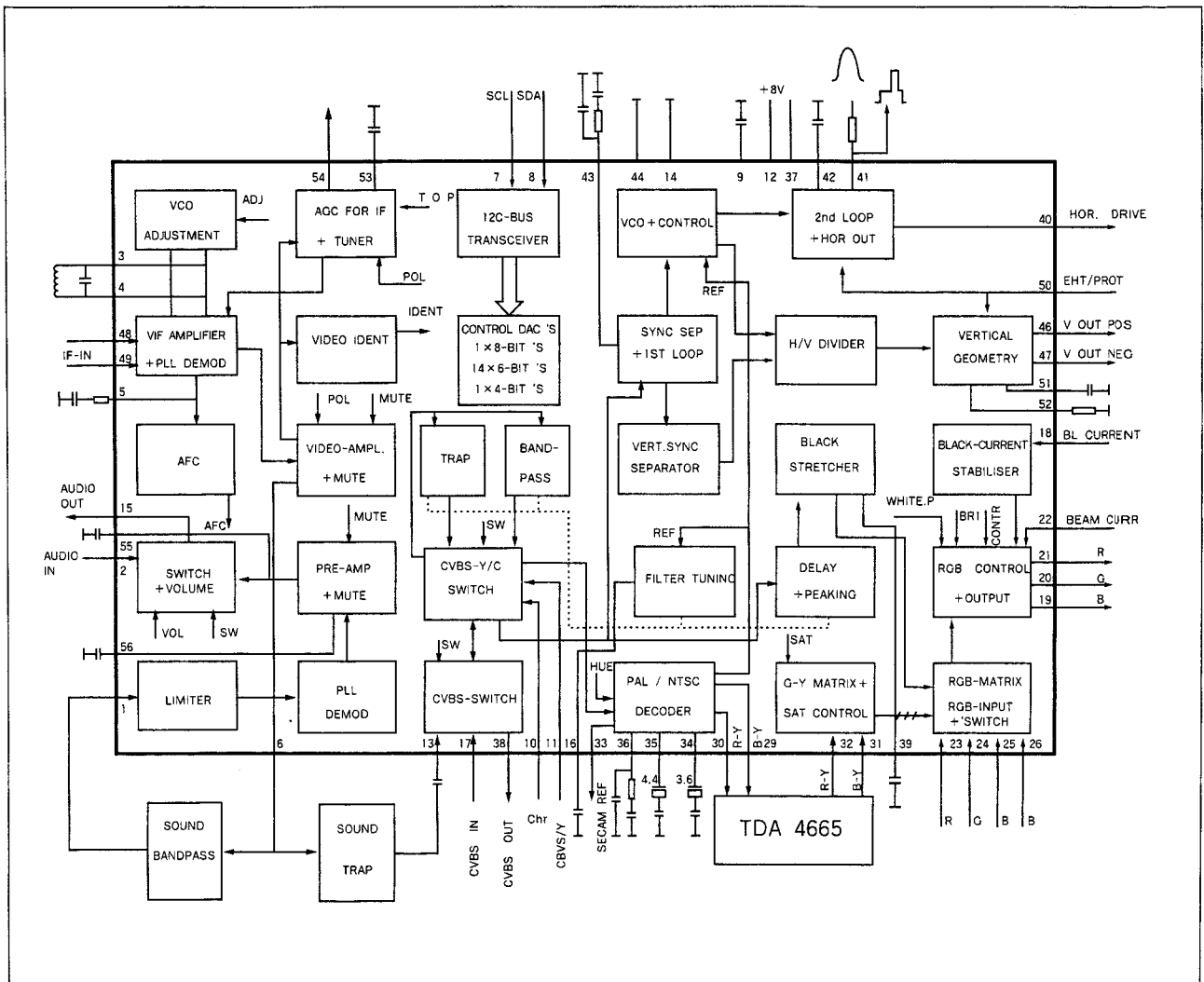
• Power consumption

- Low power consumption (900 mW at 8.0 Volts).

• Packaging

- SDIL-56 (Shrunked Dual In Line, 56 pins).

(3) Block Diagram



(4) Pin Description

No	Name	Description
1	SOUND IF INPUT	The sound equivalent input impedance is 8k5 ohm // 5pF which has to be taken into account for proper termination of the ceramic filters. The DC impedance is very high. The minimum input signal for catching is 1 mV rms.
2	EXT AUDIO INPUT	An external sound signal (500mVrms) for example from SCART can be applied to this pin via a coupling capacitor. The input impedance is 25kohm.
3 4	VCO REF FILTER	The IF VCO tuned circuit is applied to these pin. Its resonance frequency must be two times the IF-frequency and in between a range of 64-120MHz. This range is suitable for the IF standards as 33.4, 38.9, 45.75 and 58.75MHz. The VCO frequency can be adjusted by I2C bus so a fixed coil can be used.
5	PLL LOOP FILTER	The PLL loopfilter is a first order filter with R=390 ohm and C = 100nF in series to ground. The loopfilter bandwidth is 60kHz and is optimal for both fast catching and sufficient video suppression for optimal sound performance. Sound performance can theoretically be improved by adding a small capacitor (approx.0- 4.7nF) between pin 5 and ground. This however must be evaluated further because the normal video signal response should not be effected.
6	IF VIDEO OUTPUT	Although the video output impedance is low it is recommended to avoid high frequency current in the output due to for instance sound trap filters. This can be achieved by means of an emitter follower at the video output with a 1 kΩ resistor in series with the base.
7	BUS INPUT : SCL	Serial clock line
8	BUS INPUT : SDA	Serial data line
9	BANDGAP DECOUPLING	The bandgap circuit provides a very stable and temperature independent reference voltage. This reference voltage (6.7V) ensures optimal performance of the TDA8374 and is used in almost all functional circuit blocks.
10	CHROMA INPUT	The supplied C S-VHS input burst amplitude should be nominally 300mVpp (assumed is a colour bar signal with 75% saturation and with chroma/burst ratio of 2.2/1). The C S-VHS input is internally clamped to 4V via 50 kΩ. The external AC coupling capacitor with 50 kΩ forms a high pass filter. A recommended coupling capacitor is 1 nF; the high pass filter cut off frequency is then approximately 3KHz.
11	Y/CVBS INPUT	The Y S-VHS signal of 1Vpp (inclusive sync amplitude) is AC coupled to pin 11.
12 37	MAIN POSITIVE SUPPLY	The TDA8374 has a main supply pin 12 and a horizontal supply pin 37. Both pins have to be supplied simultaneously. Notice that the IC has not been designed to use this pin 37 as start pin. (pin 37 supplies the horizontal oscillator, PHI-1 and PHI-2) (pin 12 supplies the rest of the circuits in the IC) The nominal supply voltage is 8V. With min/max values of 7.2-8.8V. Also in stand-by condition the IC must be supplied with 8V.

No	Name	Description												
		<p>A voltage detection circuit is connected to both pins.</p> <ul style="list-style-type: none"> - pin12 if V12 <6.8V than a power on reset, POR, is generated. The Hout output is disabled immediate. - pin37 if V37 <5.8V than the horizontal output is disabled immediate. 												
13 17	INT CVBS INPUT EXT CVBS INPUT	<p>It is recommended that the CVBS1 int and CVBS2 ext input amplitudes are 1 Vpp (inclusive sync amplitude).</p> <p>This, because the noise detector switches the $\phi 1$ loop to slow mode (i.e. auto $\phi 1$ mode when FOA, FOB = 0,0) when noise level exceeds 100mVrms (i.e. at S/N of 20dB).</p>												
14	GROUND	All internal circuits are connected to this ground pin 14.												
15	AUDIO OUTPUT	<p>The output signal is volume controlled and is active for both internal and external audio signals. The nominal gain is +9dB and -71dB, which gives a total control range of 80dB.</p> <p>The output signal range therefor is 0.14- 1400mVrms</p> <p>The bandwidth is >100kHz, the DC level is 3.3V and the output impedance is 250 Ω.</p>												
16	DECOUPLING FILTER TUNING	Voltage variations at pin 16, which can be due to external leakage current or crosstalk from interference sources, should be less than 50mV to ensure that tuning of filters/delay cells remains correct.												
18	BLACK CURRENT INPUT	For correct operation of the loop CURRENT information is supplied to the black current input pin.												
19 20 21	BLUE OUTPUT GREEN OUTPUT RED OUTPUT	<p>The RGB outputs are supplied to the video output stages from pins 21, 20 and 19 respectively.</p> <p>For nominal signals (i.e. CVBS/S-VHS, -(R-Y)/-(R-Y), TXT inputs) and for nominal control settings, then the RGB output Signal amplitudes is typically 2VBLACK_WHITE.</p>												
22	V-GUARD INPUT/ BEAM CURRENT LIMITER	<p>Vertical Guard</p> <p>With this function, the correct working of the vertical deflection can be monitored. If the vertical deflection fails, the RGB outputs are blanked to prevent damage to the picture tube.</p> <p>Beam current limiting</p> <p>The beam current limiting function is realised by reducing the contrast (and finally the brightness) when the beam current reaches a too high level. The circuit falls apart in two functions:</p> <ul style="list-style-type: none"> - Average beam current limiting (ABL): reacting on the average content of the picture - Peak white limiting (PWL): reacting on high local peaks in the RGB signal. 												
23 24 25	RED INPUT GREEN INPUT BLUE INPUT	<p>The Rin, Gin, Bin input signals (nominal signal amplitude of 700mV) are AC coupled to pin 23, 24 and 25 respectively.</p> <p>Clamping action occurs during burstkey period.</p>												
26	RGB INSERTION SWITCH INPUT	<p>The table below a survey is given of the three modes which can be selected with a voltage on RGB insertion switch input pin ;</p> <table border="1"> <thead> <tr> <th>Vpin26</th> <th>I2C function</th> <th>Selected RGB signal</th> </tr> </thead> <tbody> <tr> <td>0.9V-3V</td> <td>IE1=0</td> <td>RGB(internal)</td> </tr> <tr> <td></td> <td>IE1=1</td> <td>Rin,Gin,Bin (fast insertion on pin23,24,25)</td> </tr> <tr> <td>> 4V</td> <td>IE1=X</td> <td>OSD can be inserted at the RGBout pins</td> </tr> </tbody> </table>	Vpin26	I2C function	Selected RGB signal	0.9V-3V	IE1=0	RGB(internal)		IE1=1	Rin,Gin,Bin (fast insertion on pin23,24,25)	> 4V	IE1=X	OSD can be inserted at the RGBout pins
Vpin26	I2C function	Selected RGB signal												
0.9V-3V	IE1=0	RGB(internal)												
	IE1=1	Rin,Gin,Bin (fast insertion on pin23,24,25)												
> 4V	IE1=X	OSD can be inserted at the RGBout pins												
27	LUMINANCE INPUT	An nominal input signal amplitude of 1 Vblack-white MUST be DC coupled												

No	Name	Description
		to the luminance input pin 27. The pin is internally AC coupled to the luminance clamp via a capacitor of 50pF; clamping action occurs during burstkey period.
28	LUMINANCE OUTPUT	The luminance output signal is approximately 1 V black-white with typical output impedance of 250 ohm.
29 30	B-Y OUTPUT R-Y OUTPUT	The maximum output impedance of pins 29 and 30 is 500 Ω when PAL/NTSC signals are identified. When SECAM is identified by the SECAM add-on and no PAL/NTSC is already identified by the ASM, then the ASM sets the -(B-Y)/-(R-Y) output switch open (via DEMSW). This enables the -(B-Y)/-(R-Y) outputs of the TDA8395 to be directly connected to pins 29 and 30 respectively.
31 32	B-Y INPUT R-Y INPUT	The -(B-Y),-(R-Y) output signals (supplied from baseband delay line) are AC coupled, via a coupling capacitor of 10nF or greater, to the -(B-Y)/-(R-Y) inputs; both inputs are clamped during burstkey period.
33	SECAM REF OUTPUT	The SECAM reference output is directly connected to pin 1 of the TDA8395 for SECAM decoding; it also can be used as a reference for comb filter applications.
34 35	X-TAL 3.58 X-TAL 4.43	To ensure correct operation of both: - colour processing internal circuits, - sync calibration internal circuits, it is only allowed to have 3.6MHz Xtals on pin34: both 4.4MHz,3.6MHz Xtals are allowed on pin 35. If pin 35 is not used: then it is left open in application (also XA,XB=0,1).
36	LOOP FILTER BURST PHASE DETECTOR	One of the important aspects of the PLL is the 10op filter connected to pin 36; it influences the dynamic performance of the loop.
38	CVBS OUTPUT	The output amplitude is 1Vpp (transfer gain ratio between CVBS1int or CVBS2ext or CVBS3ext/Ys-vhs and CVBSout is 1). The maximum output impedance is 250 ohm.
39	BLACK PEAK HOLD CAPACITOR	For the correct working of the black stretcher an external time constant should be added at the black peak hold capacitor input.
40	HOR OUTPUT	This open collector output is meant to drive the horizontal output stage. The output is active low, i.e. the line transistor should conduct during the low period of the output.
41	SANDCASTLE OUTPUT/ FLYBACK INPUT	Pin 41 is a combined input/output pin. The pin provides a three level sandcastle pulse. Both burstkey pulse and vertical blanking pulse are always available, the line blanking pulse is only present when the external flyback pulse is fed to this pin. The line flyback pulse, fed to this pin is used for two functions: - input signal for the PHI-2 10op and - RGB line blanking. (without flyback pulse blanking occurs only during the burstkey pulse) To ensure correct working of the delay line and SECAM add-on, the output should not be loaded with more than: - Sandcastle input delay line TDA 4665 - Sandcastle input SECAM add-on TDA 8395
42	PHI-2 FILTER / FLASH PROTECT	The loopfilter is a first order filter. This pin requires a capacitor (C) only.

No	Name	Description
		A flash protection becomes active when this pin is forced >6V. The horizontal drive is switched-off immediately. Once the voltage is <6V the horizontal drive is switched-on again via the slow start procedure.
43	PHI-1 FILTER	The loopfilter connected to pin 43 is suitable for various signal conditions as strong/weak and VCR signal. This is achieved by switching of the loopfilter time constant by changing the PHI-1 output current. Via I2C bus FOA/B, different time constants can be chosen, including an automatic mode which gives optimal performance under varying conditions.
44	GROUND	To this pin are connected the IC-substrate and horizontal output.
45	EAST-WEST DRIVE	not used
46 47	VERT DRIVE + VERT DRIVE -	The vertical drive has a current output. The output is balanced which ensures a good common mode behavior with temperature and makes the output signal less sensitive for disturbances.
48 49	IF INPUT	The PLL frequency range is 32-60MHz with corresponding VCO frequency 64-120MHz. The IF input impedances is 2k Ω in parallel with 3pF and matches the required load for commonly used SAW filters. A DC coupling is allowed, so no series capacitors between SAW filter and IF input are necessary.
50	EHT/OVERVOLTAGE PROTECT INPUT	not used
51	VERT SAWTOOTH CAPACITOR	This pin requires a capacitor to ground of 100nF +,- 5%. The optimal sawtooth amplitude is 3.5V and is determined by the external capacitor and charge current. The sawtooth bottom-level is 2V.
52	REFERENCE CURRENT INPUT	This pin requires a resistor to ground. The optimal reference current is 100 μ A. which is determined by this resistor.
53	AGC DECOUPLING CAPACITOR	The AGC capacitor value is 2.2 μ F and has been defined for an optimal compromise between AGC speed and tilt for all AGC modes (negative/positive modulation).
54	TUNER AGC OUTPUT	This output is used to control (reduce) the tuner gain for strong RF signals. The tuner AGC is an open collector output which is acting as a variable current source to ground.
55	AUDIO DEEMPHASSIS	Only a capacitor has to be connected to this pin that defines the deemphasis time constant. The signal is internally connected through to the Audio switch. The deemphasis output is fixed, thus not controlled by the volume, and can be used for SCART.
56	DECOUPLING SOUND DEMODULATOR	This pin requires a capacitor of 10 μ F connected to ground. The pin acts as a low pass filter needed for the DC feedback loop.

TDA4665(Base Band Delay Line)

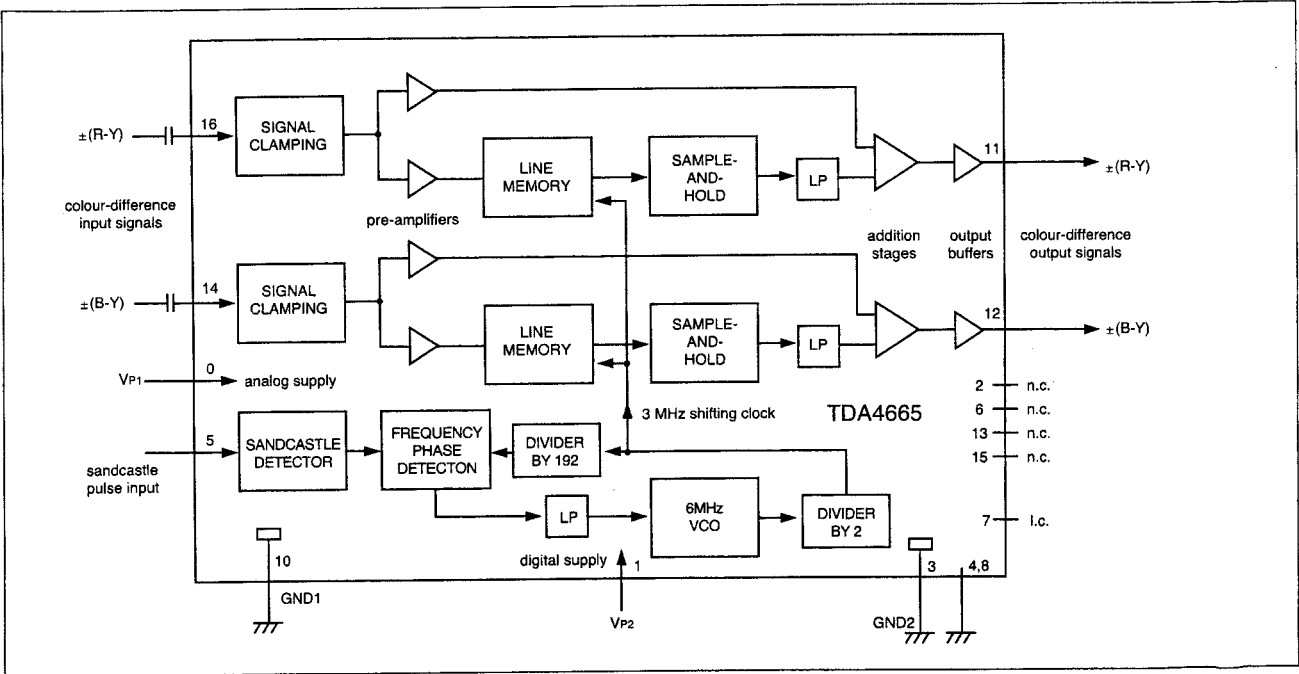
(1) Features

- Two comb filters, using the switched-capacitor technique, for one line delay time (64µs)
- Adjustment free application
- No crosstalk between SECAM colour carriers
- Handles negative or positive colour-difference input signals
- Clamping of AC-coupled input signals(±(R-Y)and±(B-Y))
- VCO without external components
- 3MHz internal clock signal derived from a 6MHz VCO, line-locked by the sandcastle pulse (64µs line)
- Sample-and-hold circuits and low-pass filters to suppress the 3 MHz clock signal
- Addition of delayed and non-delayed output signals
- Output buffer amplifiers
- Comb filtering functions for NTSC colour-difference signals to suppress cross-colour

(2) General Description

The TDA4661 is an integrated baseband delay line circuit with one line delay. It is suitable for decoders with colour-difference signal outputs±(R-Y)and±(B-Y).

(3)Block Diagram



(4) Pin Description

SYMBOL	PIN	DESCRIPTION
V _{p2}	1	+5V supply voltage for digital part
n.c.	2	not connected
GND2	3	ground for digital part (0V)
i.c.	4	internally connected
SAND	5	sandcastle pulse input
n.c.	6	not connected
i.c.	7	internally connected
i.c.	8	internally connected

SYMBOL	PIN	DESCRIPTION
V _{p1}	9	+5V supply voltage for analog part
GND1	10	ground for analog part (0V)
V _o (R-Y)	11	± (R-Y) output signal
V _o (B-Y)	12	± (B-Y) output signal
n.c.	13	not connected
V _i (B-Y)	14	± (B-Y) input signal
n.c.	15	not connected
V _i (R-Y)	16	± (R-Y) input signal

TDA8395 (Secam Decoder)

(1) Features

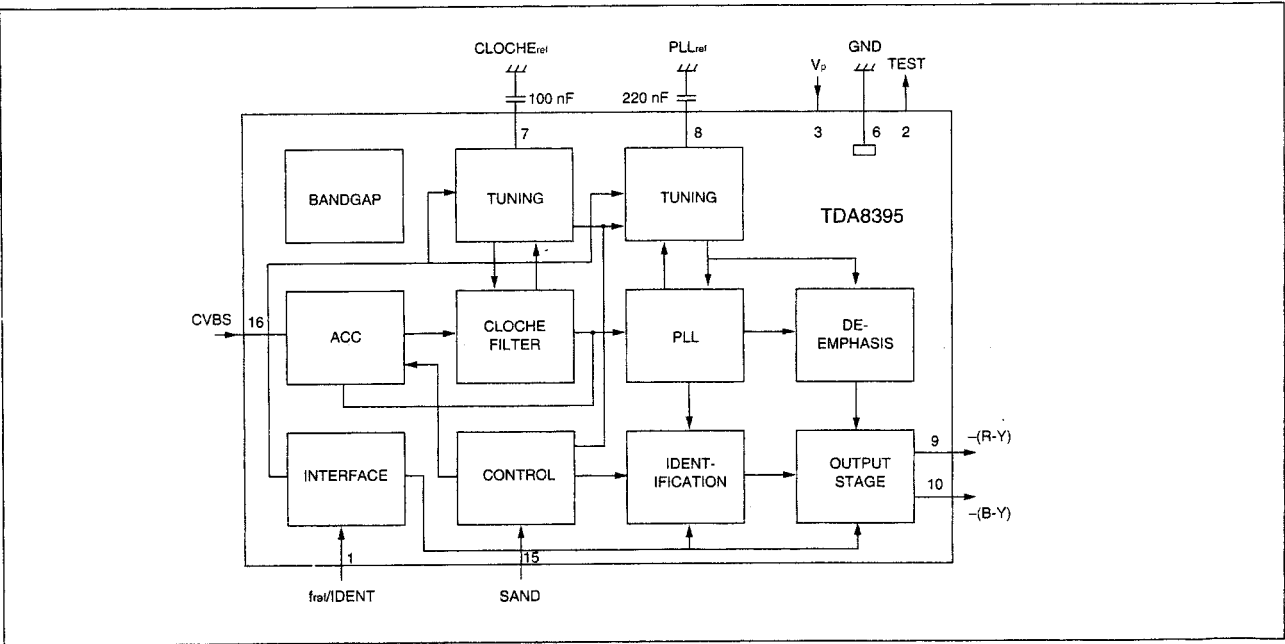
- Fully integrated filters
- Alignment free
- For use with baseband delay

(2) Description

The TDA8395 is a self-calibrating, fully integrated SECAM decoder. The IC should preferably be used in conjunction with the PAL/NTSC decoder TDA8362 and with the switch capacitor baseband delay circuit TDA4665. The IC incorporates HF and LF filters, a demodulator and an identification circuit (luminance is not processed in this IC).

A highly stable reference frequency is required for calibration and a two-level sandcastle pulse for blanking and burst gating.

(3) Block Diagram



(4) Pin Description

SYMBOL	PIN	DESCRIPTION
fp1/IDENT	1	reference frequency input/identification input
TEST	2	test output
Vp	3	positive supply voltage
n.c.	4	not connected
n.c.	5	not connected
GND	6	ground
CLOCHeref	7	Cloche reference filter
PLL ref	8	PLL reference
-(R-Y)	9	-(R-Y) output
-(B-Y)	10	-(B-Y) output
n.c.	11	not connected
n.c.	12	not connected
n.c.	13	not connected
n.c.	14	not connected
SAND	15	sandcastle pulse input
CVBS	16	video (chrominance) input

TDA6106Q (Video Output Amplifier)

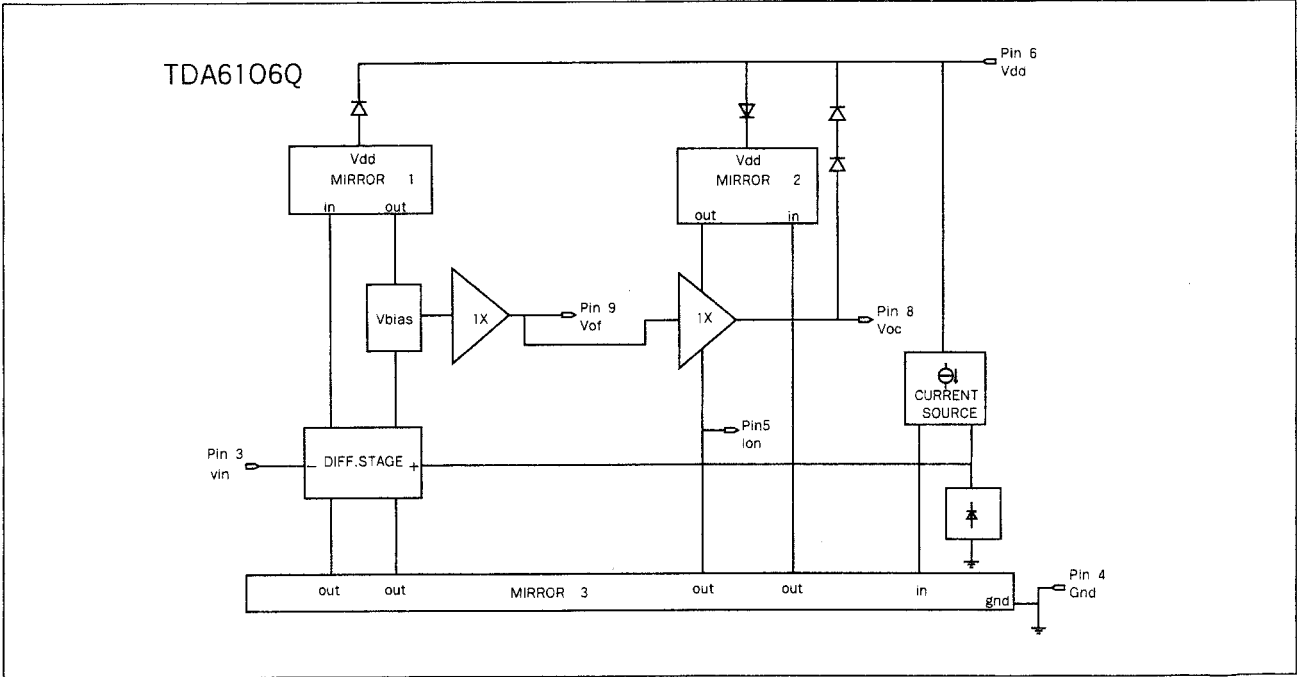
(1) General Description

The TDA6106Q is a monolithic video output amplifier (5MHz bandwidth) in a SIL 9 MPpackage, using high-voltage DMOS technology, and is intended to drive the cathode of CRT directly .
To obtain maximum performance, the amplifier should be used with black-current control.

(2) Feature

- Black - current measurement output for automatic black current stabilization (ABS)
- Single supply voltage of 200V
- Internal protection against positive appearing CRT flash-over discharge
- Protection against ESD
- Internal 2.5V reference circuit
- Controllable switch-off behavior

(3) Block Diagram



(4) Pin Description

PIN	SYMBOL	DESCRIPTION
1		N.C
2		N.C
3	V in	inverting input
4	GND	ground, substrate
5	I om	Black-current measurement output
6	V dd	supply voltage high
7		N.C
8	V oc	cathode output
9	V of	feedback/transient output

STV8225 (AM SIF Circuit)

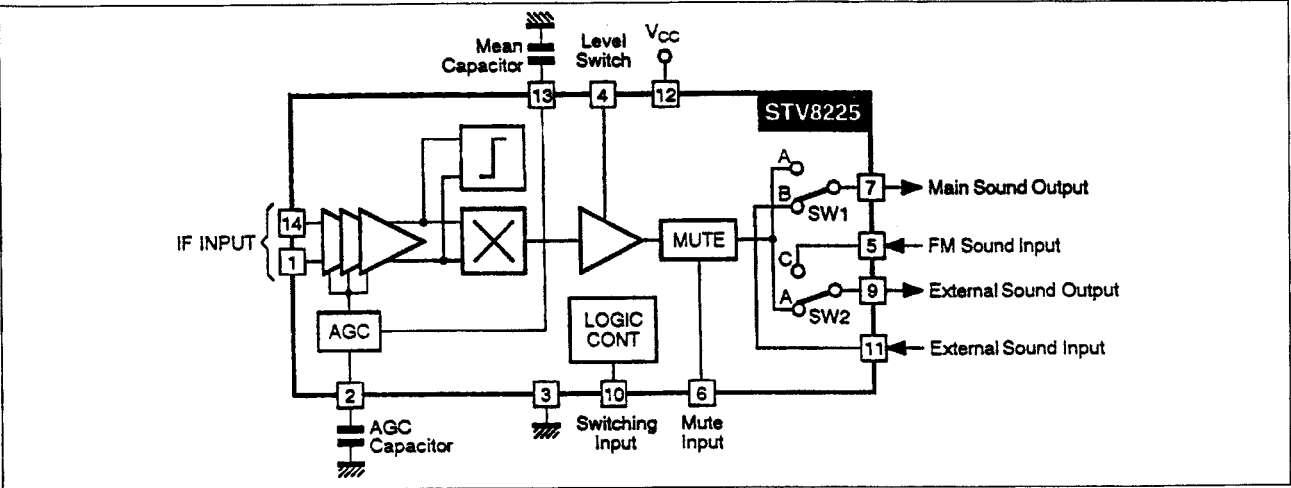
(1) General Description

The STV8225 is intended for the demodulation of the AM sound of the L standard.

(2) Feature

- sound AM synchronous demodulator
- AM/FM audio switch and AV/TV audio switch

(3) Block Diagram



(4) Pin Description

PIN	SYMBOL	DESCRIPTION
1, 14	IF in	IF input
2	AGC	AGC capacitor
3	GND	ground
4	level sw	level switch of AF output voltage (pin7,9) - open : 250 mVrms - ground : 500 mVrms
5	FM in	FM sound input
6	mute	mute input
7	main in	main sound input
8		n.c
9	ext out	external sound output
10	sw in	switching input voltage mode connection pin7 pin 9 2.3V below TV/FM A C 4.6V below TV/AM A A 6.8V below AV/AM B A 6.8V above AV/FM B C
11	ext in	external sound input
12	Vcc	supply voltage (+9V)
13	mean cap	mean capacitor

TDA8356 (DC-coupled vertical deflection circuit)

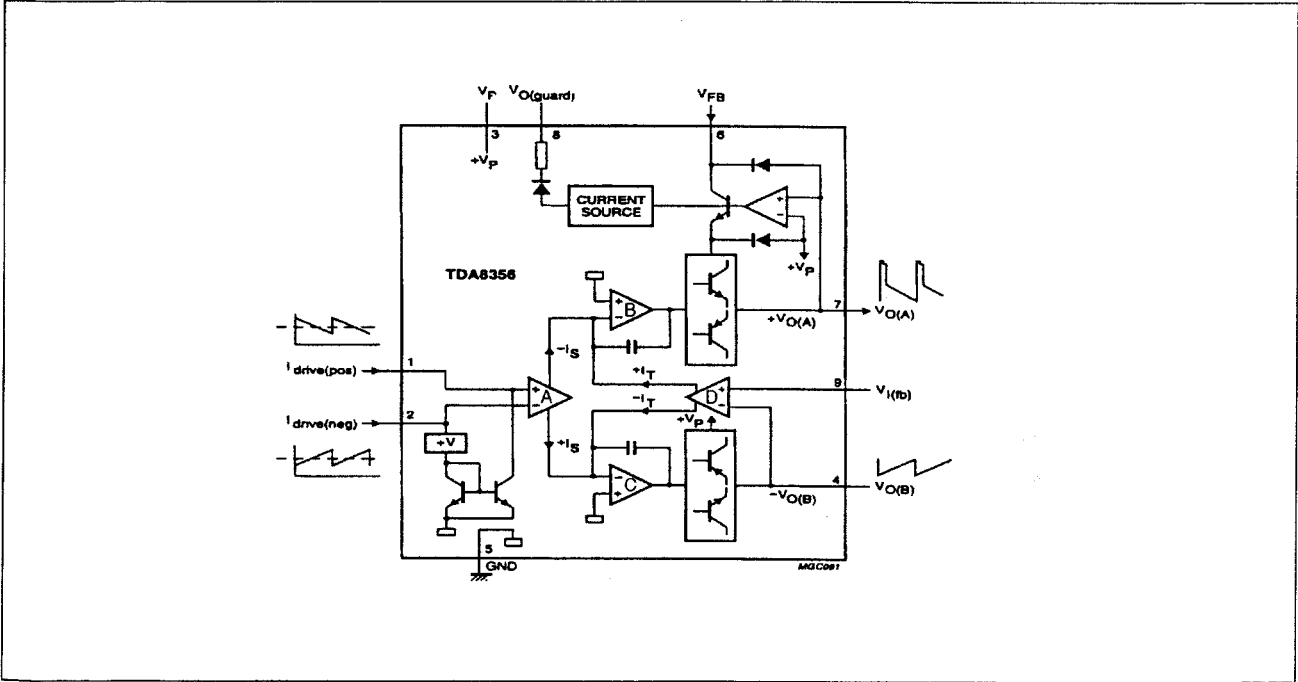
(1) General Description

The TDA8356 is power circuit for use in 90° and 110° color deflection systems for field frequencies of 50 to 120 Hz. The circuit provides a DC driven vertical deflection output circuit, operating as a high efficient class G system.

(2) Feature

- High efficient fully DC-coupled vertical output bridge circuit
- Vertical fly-back switch
- Guard circuit
- Protection against : - short circuit of the output pins (7 and 4)
 - short circuit of the output pins to Vp
- Temperature (thermal) protection
- High EMC immunity because of common mode inputs

(3) Block Diagram



(4) Pin Description

PIN	SYMBOL	DESCRIPTION
1	I drive (pos)	input power stage (positive); include li(sb) signal bias
2	I drive (neg)	input power stage (negative); include li(sb) signal bias
3	V p	operating supply voltage
4	V o(b)	output voltage B
5	GND	ground
6	V fb	input fly-back supply voltage
7	V o(a)	output voltage A
8	V o(guard)	guard output voltage
9	V l(fb)	input feedback voltage

TDA7056 (BTL AUDIO OUTPUT AMPLIFIER)

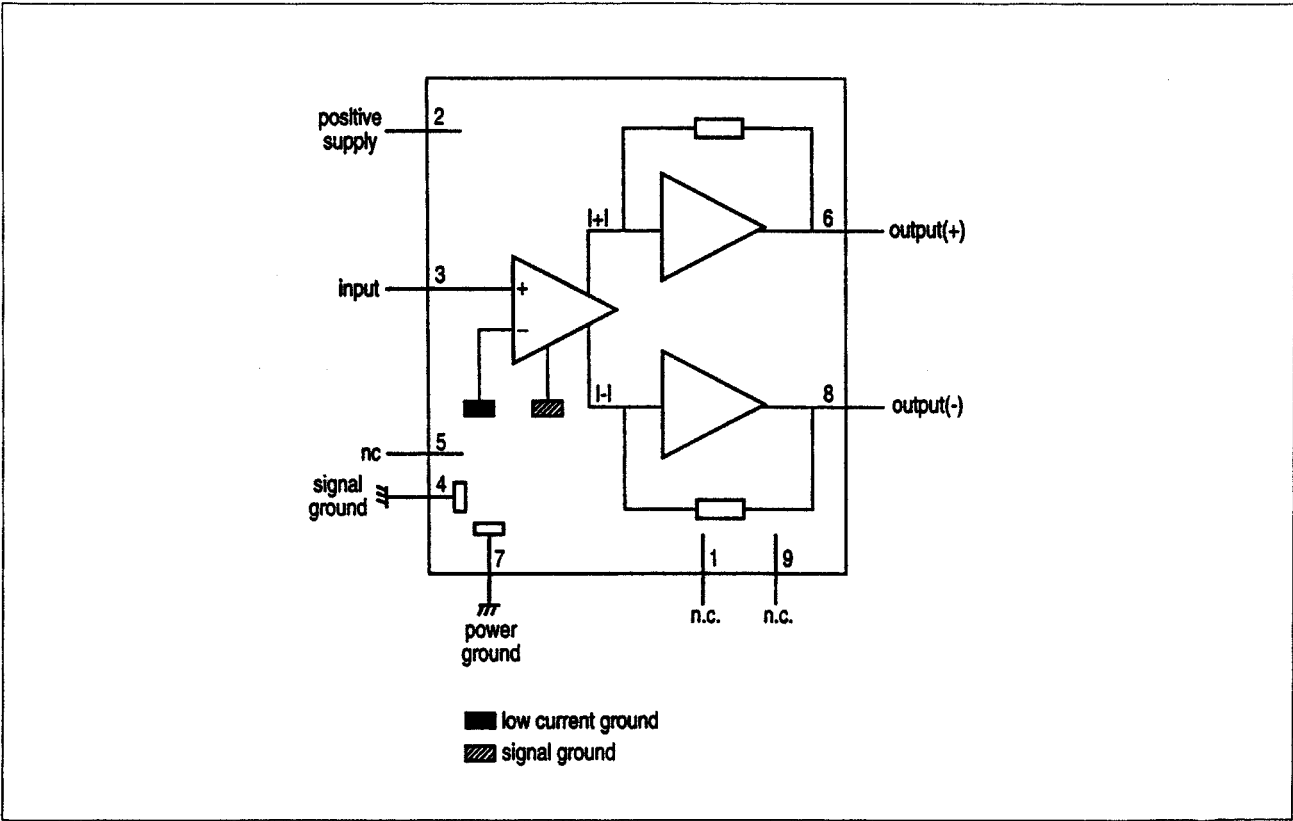
(1) Features

- No external components
- No switch-on/off clicks
- Good overall stability
- Low power consumption
- Short circuit proof
- ESD protected on all pins

(2) General Description

The TDA7056 is a mono output amplifier contained in a 9 pin medium power package. The device is designed for batteryfed portable mono recorders, radios and television.

(3)Block Diagram



(4)Pin Description

PIN	DESCRIPTION
1	n.c.
2	Vp
3	input (+)
4	signal ground
5	n.c.
6	output (+)
7	power ground
8	output (-)
9	n.c.

STR-S5707 (Hybrid IC for a Switching Regulator)

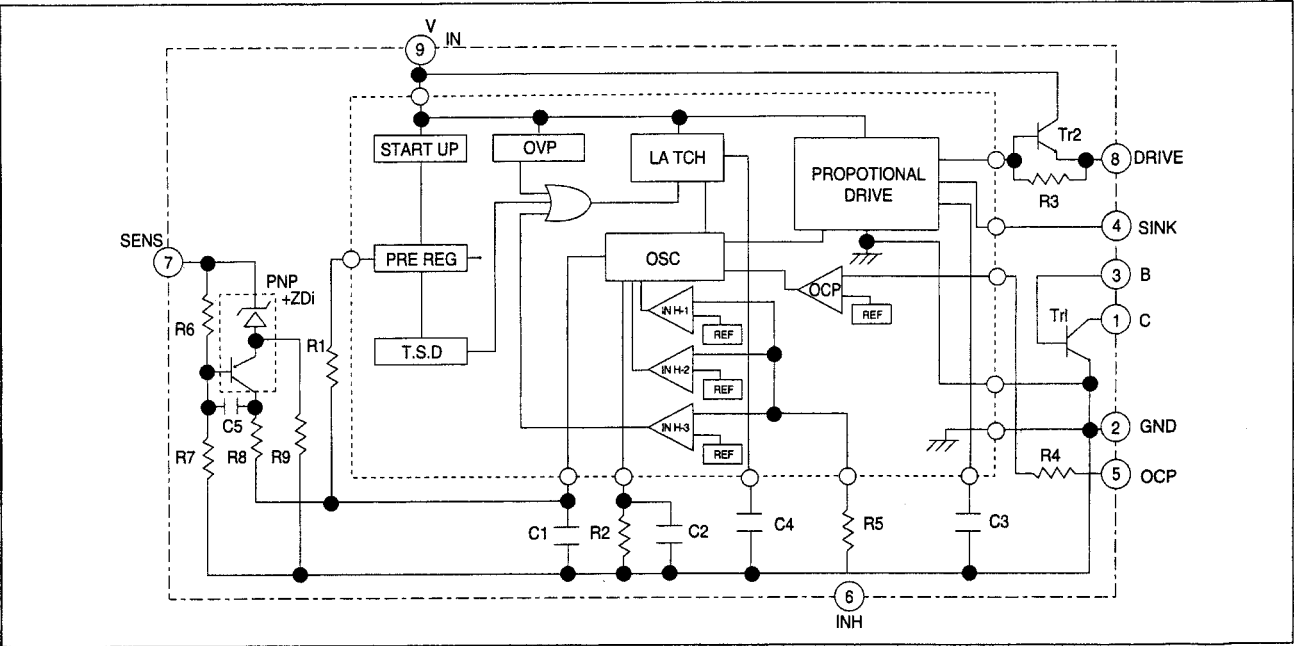
(1) General Description

The STR-S5707 is a Hybrid IC with a built in power transistor and a separate excitation control IC, designed for converter type switching mode power supply applications. The IC is capable of quasi-resonant mode and requires small number of external component.

(2) Feature

- Small SIP isolated package : Resin sealed type (transfer mold)
- Lower power dissipation at a lighter load
- Many protection function : - Pulse-by-pulse over current protection
 - Over-voltage protection with a latch
 - Thermal protection with a latch
- These protection functions are incorporated and can be latched with an external signal.

(3) Block Diagram



(4) Pin Description

PIN	NAME	SYMBOL	DESCRIPTION
1	Collector	C	Collector of power Tr
2	Ground	GND	ground (Emitter of power Tr)
3	Base	B	Base of power Tr
4	Sink	SINK	Base current (IS) input
5	Over-current protection	OCP	over-current sensing signal input
6	Inhibit Latch	INH	input for synchronizing OFF time and latch circuit operation
7	Sensing	SENS	constant voltage control signal input
8	Drive	DRIVE	Base drive current (ID) output
9	Vin	VIN	supply voltage for control circuit

Electrical Characteristics of Control Part (Ta=25℃)

Description	Terminal	Symbol	Rating			Unit
			MIN	TYP	MAX	
On-state Voltage	9-2	V _{IN(ON)}	7.6	8	8.4	V
Off-state Voltage	9-2	V _{IN(OFF)}	4.6	4.9	5.2	V
Operating Circuit Current	9-2	I _{IN(ON)}	15	—	28	mA
Stand-by Circuit Current	9-2	I _{IN(OFF)}	—	—	200	μA
On Time	—	T _{ON}	33	—	41	μsec
Off Time	—	T _{OFF}	45	—	55	μsec
OCP terminal Threshold Voltage	6-2	V _{OCP}	-1.12	-1	-0.88	V
INH terminal Threshold Voltage 1	8-2	V _{INH-1}	0.65	0.75	0.85	V
INH terminal Threshold Voltage 2	8-2	V _{INH-2}	—	1.4	2.0	V
INH terminal Threshold Voltage 3	8-2	V _{Latch}	3.2	5.1	5.8	V
OVP Operating Voltage	9-2	V _{IN(OVP)}	9.2	—	10.7	V
Latch Circuit Sustaining Current	9-2	I _H	—	—	500	μA
Latch Circuit Cancellation Voltage	9-2	V _{IN(La.OFF)}	2.5	3.1	—	V
MIC Thermal Shutdown Starting Temp	—	T _{J(TSD)}	125	150	—	℃
Fixed Reference Voltage	7-2	V _s	32.0 ± 0.3			V
Temperature Coefficient of Reference Voltage	7-2	—	—	+2.5	—	mV/℃

Electrical Characteristics of Power Transistor Part(Trl) (Ta=25℃)

Description	Terminal	Symbol	Rating			Unit
			MIN	TYP	MAX	
Collector Saturation Voltage	1-2	V _{CE(sat)}	—	—	0.4	V
Collector Cutoff Current	1-2	I _{CEX}	—	—	100	μA
Base-Emitter saturation voltage	3-2	V _{BE(sat)}	—	—	1.5	V
DC Current Gain	—	h _{FE}	29	—	61	—
Thermal Resistance	—	θ _{J-F}	—	—	1.3	℃/W
Switching Time	1-2	t _s	—	—	15	μsec
	1-2	t _f	—	—	0.5	

TDA8138 (5.1V+12V regulator with Disable and Reset)

(1) General Description

The TDA8138 is a monolithic dual positive voltage regulator designed to provide fixed precision output voltages of 5.1V and 12V at currents up to 1A.

A internal reset cuicuit generates a reset pulse when the output 1 decrease below the regulated voltage value.

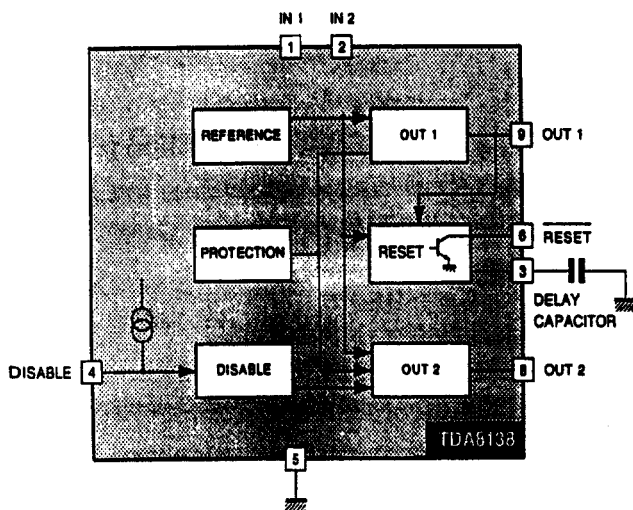
Output 2 can be disabled by TTL input.

Shot circuit and thermal protections are included.

(2) Feature

- output currents up to 1A
- fixed precision Output 1 voltage 5.1V $\pm 2\%$
- fixed precision Output 2 voltage 12V $\pm 2\%$
- output 1 with Reset facility
- output 2 with Disable by TTL input
- short circuit protection at both outputs
- thermal protection
- low drop output voltage

(3) Block Diagram



(4) Pin Description

PIN	SYMBOL	DESCRIPTION
1	V in 1	input 1
2	V in 2	input 2
3	C e	Delay capacitor
4	V dis	disable
5	GND	ground
6	RST	reset
7		n.c
8	V out 2	output 2 (12V)
9	V out 1	output 1 (5.1V)

GMS30112-R098 (4-bit Single Chip Microcomputer for Remote control)

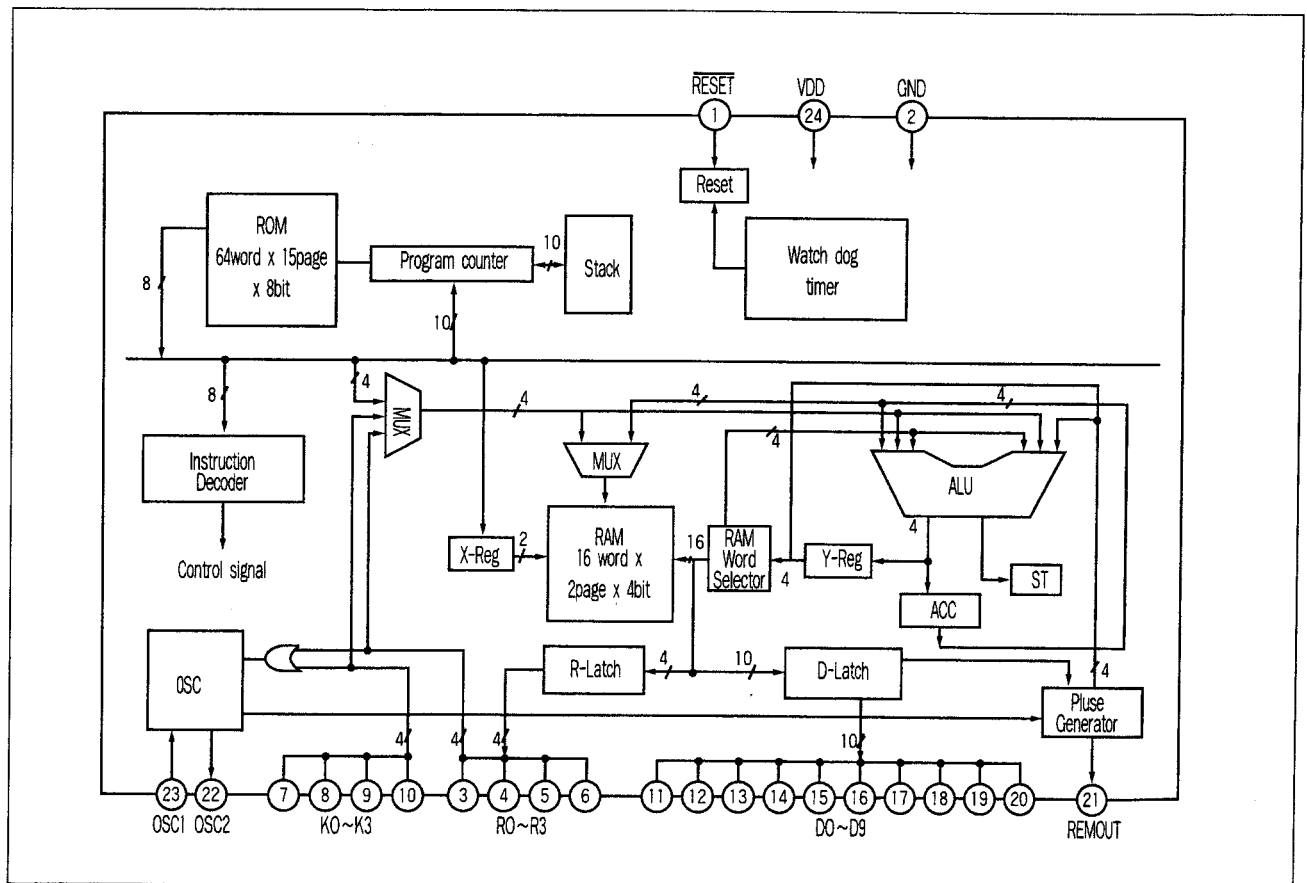
(1) General Description

The GMS30112-R098 is 4-bit single chip CMOS microcomputer.

(2) Feature

- program memory : 1024 bytes
- data memory : 32 x 4 bits
- 43 types of instruction set
- 3 levels of subroutine nesting
- 1 bit output port for a large current (REMOUT signal)
- operating frequency : 300kHz - 1 MHz
- instruction cycle : 12.5 usec @ 480kHz
- CMOS process (single 3.0 V power supply)
- stop mode (through internal instruction)
- released stop mode by key input (masked option)
- built in capacitor for ceramic oscillation circuit (masked option)
- built in a watch dog timer(WDT)
- low operating voltage (2.0 V to 4.0 V)

(3) Block Diagram



(4) Pin Description

PIN	SYMBOL	DESCRIPTION
1,2,3,4	K0,K1,K2,K3	4 bit input port with built in pull up resistor
5,6,7,8,9,10	D0,D1,D2,D3,D4,D5	10 bit output port which can be set or reset pin by pin independently. The output structure is N-channel open drain.
11	REMOUT	remote control signal output port which has high current driving capability
12	OSC 2	oscillator output
13	OSC 1	oscillator input
14	Vdd	2-4V power supply
15	RESET	reset signal input which is a low active
16	GND	ground
17,18,19,20	R0,R1,R2,R3	4 bit programmable I/O port

■ Circuit Description

Vision IF amplifier, AFC, video demodulator

The IF signal from the tuner is fed through a SAW filter to the differential IF input (pin 48 and 49).
The first IF stage consists of 3 AC-coupled amplifiers with a total gain control range of over 66 dB.
The reference carrier for the video demodulator is obtained by a PLL carrier regenerator (eliminating notch filter compromises, as in reference tuned circuits for passive carrier regeneration).
Only an oscillator coil is needed (pin 3 and 4) that can be aligned via I2C-bus to the double IF frequency.

The AFC information is derived from the VCO control voltage of the IF-PLL and can be read via I2C-bus.

Bit AFB toggles when the picture carrier is exactly at the desired IF frequency (= half the aligned IF-PLL frequency).

AFA is active in a window around this point.

For fast search-tuning applications this window can be increased by a factor 3 (AFW bit).

Tuner A.G.C.

The automatic gain control (A.G.C.) circuit operates on top sync level at negative modulated signals or on peak white level at positive modulation, selected by MOD bit.

The tuner A.G.C. is controlled via pin 54.

The tuner A.G.C. take over point (T.O.P.) can be set over a wide range: 0.8 mVrms .. 80 mVrms IF input signal amplitude.

The tuner AGC output may have to operate above Vcc of TDA8374.

Therefore pin 54 is an open collector output, that can operate from 0.3 up to Vcc+ 1 Volt (at > 2 mA sink current)

PLL sound demodulator

The IF-video output at pin 6 (2Vpp) is fed through a sound bandpass filter and connected to the intercarrier sound IF input pin 1.

An alignment free PLL tunes itself to the sound carrier and demodulates it.

The non volume-controlled front-end audio signal can be obtained from the deemphasis pin 55 (amplitude 300 mVeff).

Source select switch

TDA8374 input switch can select one of the following sources ;

pin 13 front-end : CVBS I int

pin 17 : CVBS 2 ext

pin 11, pin 10 : Y s-vhs, C s-vhs

Selected signal is available at the CVBS output pin 38, in case of Y/C input Y+C are added.

It drive teletext and the TDA8395 SECAM add-on.

For S-VHS applications, the Y,C input can be selected, independent of the CVBS source switch.

TDA8374 Y,C inputs are selected, while the source switch outputs CVBS I int or CVBS 2 ext on CVBS out.

Horizontal synchronization and protection

The synchronization separator adapts its slicing level in the middle between top-sync and black level of the CVBS signal.

The separated synchronization pulses are fed to the first phase detector and to the coincidence detector.

The ϕ -1 loop gain is determined by the components at pin 43 (C+RC).

The coincidence detector detects whether the horizontal line oscillator is synchronized to the incoming video.

The line oscillator is a VCO-type, running at twice the line frequency.

It is calibrated with the X-tal oscillator frequency of the colour decoder and has a maximum deviation of 2% of the nominal frequency, so no alignment is-needed.

Calibration is done at start up (the TDA8374 must first know what colour X-tals are connected, bits XA and XB) and after synchronization loss (ϕ -1 coincidence detector "Sync Locked" bit SL).

The second phase detector ϕ -2 locks the phase of the horizontal driver pulses at output pin 40 to the horizontal flyback pulse at input pin 41 .

This compensates for the storage time of the horizontal deflection transistor.

The ϕ - 2 loop filter (C) is externally connected to pin 42.

The horizontal phase can be given a static off set via I2C-but (HSH "horizontal shift")

A dynamic correction is possible by current feedback into the ϕ - 2 loop filter capacitor.

To protect the horizontal deflection transistor, the horizontal drive is switched off immediately when a power failure (" Power-On Reset " bit POR) is detected.

The power failure may have corrupted the contents of the internal data registers, so the TDA8374 should be started up again.

The TDA8374 has a separate supply input (pin 37) that only used as a clean supply voltage for the horizontal oscillator circuits.

Vertical synchronization

The vertical sawtooth generator drives the vertical output.

It uses an external capacitor at pin 51 and a current reference resistor at pin 52.

The TDA8374 vertical drive has differential current outputs for DC-coupled vertical output stage, like the TDA8356 .

At TDA8356 input pins 1 and 2 this current is converted into a drive voltage via a resistor.

Geometry processing

With the TDA8374 is possible to implement automatic geometry alignment, because all parameters are adjusted via the I2C bus.

The deflection processor of the TDA8374 offers the following five controls;

- Horizontal shift
- Vertical slope.
- Vertical amplitude
- Vertical S-correction
- vertical shift

Colour decoder

The colour decoder contains an alignment-free X-tal oscillator, a dual killer circuit and colour difference demodulators. Together with the TDA8395 SECAM add-on a multi standard PAL/SECAM/NTSC decoder can be built with automatic recognition.

Which standard can be decoded depends on the external Xtals used.

Two Xtal pins (34 and 36) are present so normally no external switching is required.

The I.C. must be told which X-tals are connected (bits XA and XB).

This is important, because the X-tal frequency of the colour decoder is also used to calibrate many internal circuit.

The burst phase detector locks the Xtal oscillator with the chroma burst signal.

The phase detector operates during the burst key period only, to prevent disturbance of the PLL by the chroma signal.

Two gain modes provide:

- Good catching range when the PLL is not Locked.
- Low ripple voltage and good noise immunity once the PLL has locked

The killer circuit switches-off the R-Y and B-Y demodulators at very low input signal conditions (chroma burst amplitude).

A hysteresis prevents on/off switching at low, noisy signals.

Color standard	pin34	pin35	XA	XB
PAL4.43/SECAM + NTSC-4.43	none	4.43	1	0
PAL4.43/SECAM + NTSC-M	3.58	4.43	1	1

Integrated video filters

The TDA8374 has alignment-free internal luminance delay, chroma bandpass and chroma trap. They are implemented as gyrator circuits tuned by tracking to the frequency of the chroma Xtal oscillator. The chroma trap in the Y signal path is by-passed when Y/C input is selected (S-VHS). For SECAM an extra luminance delay is build-in, for correct delay of the luminance signal.

RGB output and black current stabilization

The colour difference signals (R-Y, B-Y) are matrixed with the luminance signal (Y) to obtain the RGBout output signals (pins 21,20,29). In the TDA8374 the matrix type automatically adapts to the decoded standard (NTSC,PAL) . Linear amplifiers are used to interface external RGBin signals (pins 24,25,26) from the SCART connector. These signals overrule the internal RGB signals when the data insertion pin 26 (FBI) is switched to a level between 1.0V and 3.0V.

The contrast and brightness control and the peak white limiter operate on both internal and external RGB signals R,G and B each have their own, independent gain control to compensate for the difference in phosphor efficiencies of the picture tube: so called "white point" adjustment. The nominal amplitude is about 2V black to white, at nominal input signals and control settings.

TDA8374 has a black current stabilization loop, that automatically adjust the black level to the cut-off voltage of the picture tubes three gun cathodes.

Since no current is flowing when the voltage the cathode is equal to the cut-off voltage of the tube, the loop stabilizes at a very small gun current.

This "black current" of the three guns is measured internally and compared with a reference current, to adjust the black level of RGBout.

The black level loop is active during 4 lines at the end of the vertical blanking.

In the first line the leakage current is measured (max. acceptable 1100 μ A).

In the next three lines the black levels of the three guns are adjusted.

The nominal value of the 'black current' is 10 μ A.

The ratio of the 'black currents' for the 3 guns tracks automatically with the white point adjustment, so the back-ground colour is the same as the adjusted white point.

At switch-on of the TV receiver the black current stabilization circuit is not yet active and RGBout are blanked.

Before the first measurement pulses appear, 0.5 sec delay ensures that the vertical deflection is active, so the pulses will not be visible on the screen.

During the measuring lines RGBout will supply 4V pulses to the video output stages.

The TDA8374 waits until the black current feedback input (pin 18) exceeds 200 μ A, which indicates that the picture tube is warm-up.

Then the black current stabilization circuit is active.

After a waiting time of about 1.0 sec, the blanking of RGBout is released.

Tuning

The AFC information of the TDA8374 is not available as an analogue voltage.

Automatic following (=frequency tracking, AFC) can be done via the I2C-bus by software.

The TDA8374 AFC window is typically 80 kHz wide.

This value is made higher than the 62.5 kHz tuning step, to prevent an automatic following loop from continuously adapting the tuning frequency..

With this AFC window (± 40 kHz) the maximum tuning error is less than 62.5 kHz.

For high speed search-tuning-algorithms, the AFC window can be widened to 240 kHz via bit AFW.

TDA8395 SECAM decoder

The TDA8395 is an alignment-free SECAM colour decoder, including a Cloche filter, demodulator and line identification circuit.

The Cloche filter is a gyrator-capacitor type.

Its frequency is calibrated in the vertical retrace period.

The calibration reference(pin 1) is obtained from the TDA8374 color X-tal oscillator (pin 33).

Pin 7 is a decoupling for the Cloche reference.

The voltage change at this pin due to leakage currents should be lower than 10 mV, during field scan, resulting in a capacitor of minimal 100 nF.

Pin 8 is the reference capacitor for the PLL.

The voltage variation during field scan at this pin should be lower than 2 mV , resulting in a capacitor of 220 nF.

The sandcastle input (pin 15) is connected to TDA8374 pin 41 and is used for generation of the blanking periods and provides clock information for the identification circuit.

The CVBS source select output (TDA8374 pin 38) supplies SECAM chroma to pin 16 of the TDA8395.

This is demodulated by a PLL demodulator, that uses the reference frequency at pin 1 and a bandgap reference to obtain the desired demodulation characteristic.

If the digital line identification in the TDA8395 detects SECAM, pin 1 will sink a current of 150 μ A out of TDA8374 SECAMref pin 33.

When the TDA8374 has not detected PAL or NTSC, it will respond by increasing the voltage at pin 33 from 1.5V to 5V. Now the TDA8374 color difference outputs pin 30 and 29 are made high-ohmic and the TDA8395 output pin 9 and 10 are switched on.

These outputs will be disconnected and high-ohmic when no SECAM is detected for two frame periods, the decoder will be initialized before trying again.

SECAM-L and -L' application

For SECAM-L and L' the TDA8374 has to be switched to positive modulation via I2C-bus bit MOD.

SECAM-L' signals only occur in VHF band I and have their picture and sound carrier interchanged, compared to SECAM-L/PAL channels.

For SECAM-L' the IF picture carrier is situated at 34.2 MHz and the AM-sound carrier at 40.7MHz.

Therefore the IF-PLL reference has to be tuned away from 38.9 to 34.2 MHz.

This can be done via I2C-bus sub-address 15hex (IF-PLL).

The AM sound output is inserted at TDA8374 external audio input pin via the SCART plug.

When bit MOD selects positive modulation for SECAM-L/L', the TDA8374 automatically switches to external audio.

Base band delay line TDA4665

TDA4665 is an integrated double baseband delay line of 64 μ s.

It couples to the TDA8374 and TDA8395 without any switches or alignments.

The TDA4665 consist of two main blocks:

- Two delay lines of 64 sec in switched capacitor technique
- Internal clock generation of 3 MHz, line locked to the sandcastle pulse

The TDA4665 operates according to the mode demanded by the colour transmission standard:

- For PAL it operates as geometric adder to satisfy the PAL demodulation requirements
- In NTSC mode it reduces cross-colour interference (comb-filtering)
- For SECAM it repeats the colour difference signal on consecutive horizontal scan lines.

A sandcastle pulse is connected to pin 5.

The top pulse voltage (should not exceed 5 V) can be directly coupled to the 5 V sandcastle output of the TDA8374.

The R-Y and B-Y colour difference signals (from TDA8374 pins 30 and 29) are AC-coupled and clamped by the input stages at pins 16 and 14.

An internal 6 MHz Current controlled oscillator is line locked via a PLL to the sandcastle pulse at pin 5.

This clock drives the delay lines to obtain the required 64 μsec .

Sample and hold low pass filters suppress the clock signal.

The original and the delayed signals are added, buffered and fed to the output pins 11 and 12.

These are AC-coupled to the R-Y and B-Y colour difference input pin 32 and 31 of TDA8374.

The TDA4665 needs a 5 V supply voltage on pin 1 for the digital part and on pin 9 for the analog part.

TDA8356 vertical deflection.

The TDA8356 is a vertical deflection circuit.

It can be used in 90 deflection systems with frame frequencies from 50 up to 120 Hz

With its bridge configuration the deflection output can be DC coupled with few external components.

Only a supply voltage for the scan and a second supply for the flyback are needed.

The TDA8356 can drive max.2A.

The vertical drive currents of TDA8374 pins 47 and 46 are connected to input pins 1 and 2 of the TDA8356.

The currents are converted into a voltage by a resistor between pins 1 and 2.

Pin2 is on a fixed DC level (internal bias voltage) and on pin 1 the drive voltage can be measured (typical 1.8 Vpp).

The drive voltage is amplified by 'A' and fed to two amplifiers 'B' and 'C', one is inverting and the other is a non inverting amplifier.

The outputs (pins 4 and 7) are connected to the series connection of the vertical deflection coil and feedback resistor.

The voltage across feedback resistor is fed via pin 9 to correction amplifier 'D', to obtain a deflection current which is proportional to the drive voltage.

The supply voltage for the TDA8356 is 16V at pin 3.

The flyback generator has a separate supply voltage of 45V on pin 6.

The guard pulse is useful to synchronize OSD.

Horizontal deflection

The circuit contains horizontal drive, line output transformer.

The horizontal driver pulses from the TDA8374 are amplified in the horizontal drive circuit, to get sufficient base-drive current for the high voltage switching transistor Q401.

During the horizontal scan period($\approx 52 \mu\text{s}$) Q401 will conduct, and a sawtooth current flows from +110/123V through the primary winding of the FBT to ground.

After this time Q401 is switched off and the energy stored in the FBT during the scan period will be transformed to the flyback capacitor C410.

This energy transfer will take place in a cosine shape because the primary of the FBT and C410 form a resonant circuit.

The time the energy is transferred from FBT to C410 and back to the FBT, is called the flyback time and will take place in about 12 μs .

The flyback peak voltage is about 8 times the scan voltage.

In series with the horizontal deflection coil there is a (damped) linearity corrector coil.

During the scan there is some loss in the resistance of the deflection coil.

In the first part of a line the linearity corrector stores some energy in a permanent magnet until it is saturated.

This improves the linearity of the horizontal scan speed.

The required S correction for the picture tube can be adjusted with the value of C411.

The beam current limiting information (BeamCurr) is derived from the foot of the H.V winding of the FBT.

This is connected via resistor to +8V.

As the beam current increase, the voltage on line BeamCurr decreases.

BeamCurr is damped by a integration filter before it is fed back to TDA8374 pin 22.

The TDA8374 will decrease the contrast (and eventually the brightness) to limit the average beam current.

Video amplifiers

Three TDA6106Q integrated video amplifiers drive cathode of the picture tube directly.

They are protected against CRT flashover discharges and ESD (electro static discharge).

The three video amplifiers, have a beam current output I black, used by the TDA8374 black current loop to control the black level on the cathodes.

The outputs can be connected together because the black current loop sequentially controls the black level for each cathode.

The amplification of the TDA6106Q is set by the resistors between pin 3 and 9 and between pin 3 (negative-input) and the TDA8374 output.

There are no alignment any more on the CPT panel, because of the automatic black current stabilization and because the white point adjustment can be done in the TDA8374 via I2C bus.

Power Supply STR-S5707

(1) VIN terminal, start-up circuit

A start-up circuit is to start and stop a operation of a control IC by detecting a voltage appearing at a VIN terminal (pin-9).

At start up of a power supply, when a voltage at the VIN terminal reaches to 8V (typical) by charging up C807 by the function of a start-up resistor, R803, a control circuit starts operating by the function of the start-up circuit.

After the control circuit starts its operation, power source is obtained by smoothing voltage appearing at winding of pin6-7 of T801.

(2) Oscillator, F/B terminal voltage (Pin 7)

A oscillator generates pulse signals which turns a power transistor on and off by making use of charge and discharge of C1 and C2 incorporated in the Hybrid IC.

Constant voltage control of a switch-mode power supply is performed by changing both ON-time and OFF-time except when the load is light (ex. remote control stand-by mode of TVs).

The ON-time is controlled by changing a current charged by C1, which is as the result of that the detection winding of pin5-7 of T801, which detects a change of voltage in a secondary side, connected to the sensing terminal (Pin 7) has the current in accordance with an output signal from an output voltage detection circuit (an error amplifier) built in.

As an AC input voltage to the power supply gets the higher and a load current the smaller, the current flowing to the SENS terminal gets the larger, and the ON-time gets the shorter.

(3) Function of INH terminal (Pin 6), control of OFF-time

Signal to the INH terminal is used as inputs to COMP.1 and COMP.2 inside of the control IC.

A threshold voltage of COMP.1, VTH1 is set at 0.75V (Ta=25°) and an input signal to a drive circuit becomes almost 0V (the power transistor is in OFF mode) when a voltage at the INH terminal reaches the VTH1.

A threshold voltage of COMP.2, VTH2, is set at 1.5V (Ta=25°).

When the INH terminal voltage reaches VTH2, an output from COMP.2 reverses (the power transistor is in on mode).

* Quasi-resonant operation

By inputting the voltage of winding of pin6-7 of T801 which is synchronized with the energy discharge time of a secondary winding, pin14(or 15)-16 of T801, to the INH terminal through D805 and R809, quasi-resonant operation can be achieved.

When the power transistor turns off and a voltage higher than V_{TH2} is applied to the INH terminal, C3 immediately discharges and then starts charging again.

Even after the discharge of energy of a secondary winding is completed, V_{INH} does not immediately increase.

When it gets lower than V_{TH1} , the transistor turns on.

* Stand-By Mode

While being in remote control stand-by mode, the output voltage is kept on providing to the secondary side and the power transistor operates at A class mode.

By connecting INH terminal (Pin 6) to the GND, the OFF-time of the power transistor is fixed at set time ($T_{OFF} = 50\mu\text{sec}$ at $T_a = 25^\circ\text{C}$) of the built-in oscillator, and only ON-time changes depending on input and output conditions of the power supply.

Therefore, it enables to hold an oscillation frequency in light mode below 20KHz (typical).

(4) Drive circuit

The STR-S5707 applies the proportional drive system in order to minimize turn-on and saturation loss, and storage time.

(5) OCP (over-current protection) function

Over-current protection is performed pulse by pulse by directly detecting collector current of the power transistor.

Detecting voltage is set to -1V below a reference point of GND (ground).

(6) Latch circuit

It is a circuit which sustains an output from the oscillator low and stops operation of the power supply when over-voltage protection (OVP) circuit and thermal shutdown (TSD) circuit are in operation.

As the sustaining current of the latch circuit is 500 μA maximum when V_{IN} terminal voltage is 4V, the power supply circuit sustains the off state as long as current of 500 μA minimum flows to V_{IN} terminal from a start-up resistor.

In order to prevent a malfunction to be caused by a noise and so on, delay time is provided by C1 incorporated in the IC and, therefore, the latch circuit operates when the OVP or TSD circuit is in operation, or an external signal input is provided for about 10 μsec or longer.

In addition, even after the latch circuit start operating, the constant voltage regulator (Reg) circuit is in operation and the circuit current is at high level.

As a result, V_{IN} terminal voltage rapidly decreases.

When V_{IN} terminal voltage becomes lower than the shutdown voltage, $V_{IN(OFF)}$ (4.9V typical), it starts increasing as the circuit current is below 500 μA .

When it reaches the ON-state voltage, $V_{IN(ON)}$ (8V typical), V_{IN} terminal voltage starts decreasing because the circuit current increases again.

When the latch circuit is on, V_{IN} terminal voltage increases and decreases within the range from 4.9V typical to 8V typical and is prevented from abnormally rising.

Cancellation of the latch is done by decreasing V_{IN} terminal voltage below 3.3V.

The power supply can be restarted after disconnecting an AC input to the power supply once.

(7) Thermal shutdown circuit

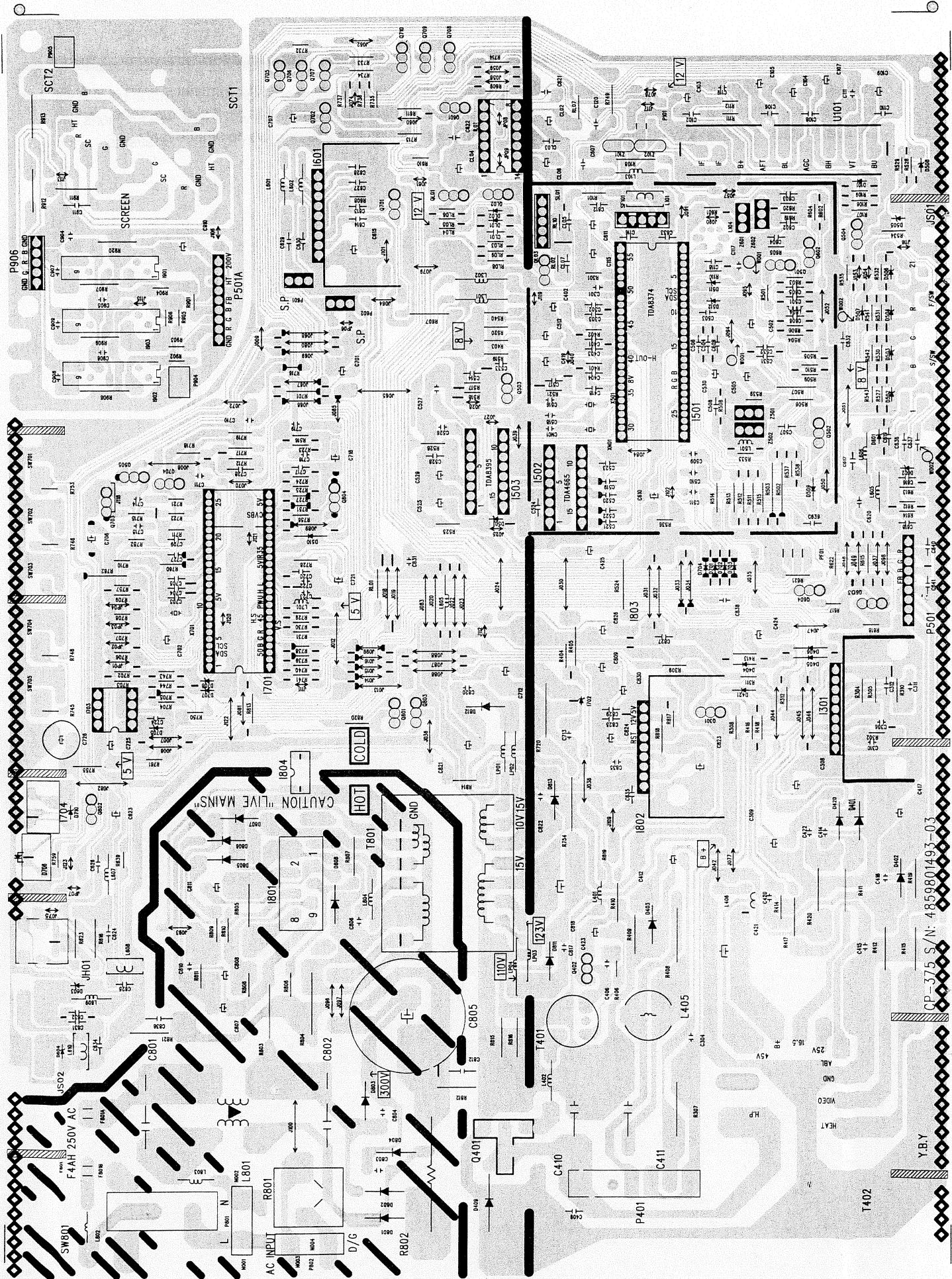
It is a circuit to trigger the latch circuit when the frame temperature of the IC exceeds 150°C (typical).

Although the temperature is actually sensed at the control chip, it works against overheating of the power transistor as the power transistor and the control IC are mounted on the same lead frame.

(8) Over-voltage protection circuit

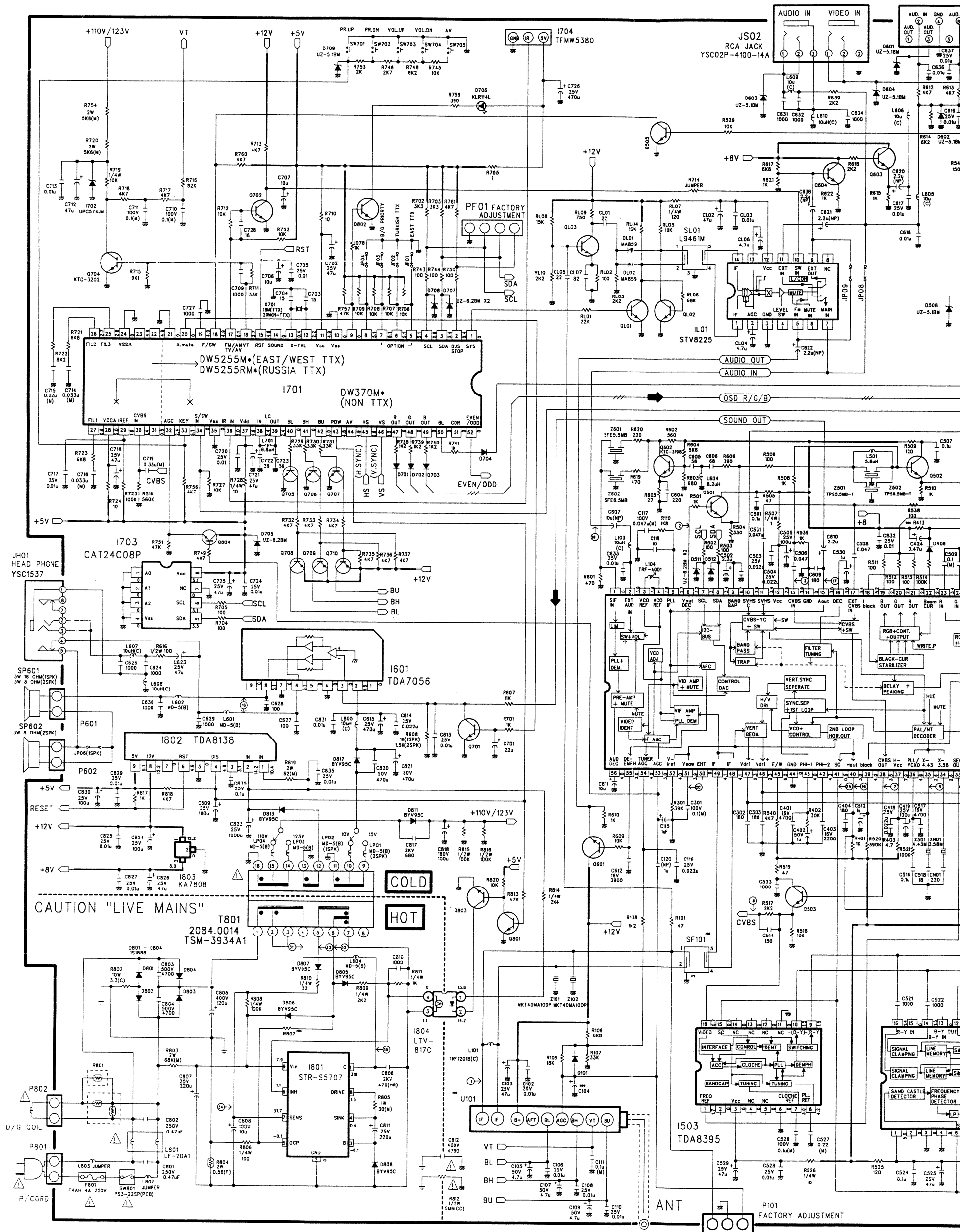
It is a circuit to trigger the latch circuit when V_{IN} terminal voltage exceeds 11V (typical).

Printed Circuit Boards



CP-375 CHASSIS SCHEMATIC

RUN NO.1 6.JAN 1997



JS01 SCART JACK

VIDEO IN (Y)

VIDEO OUT (Y)

R/G/B OUT

HEATER

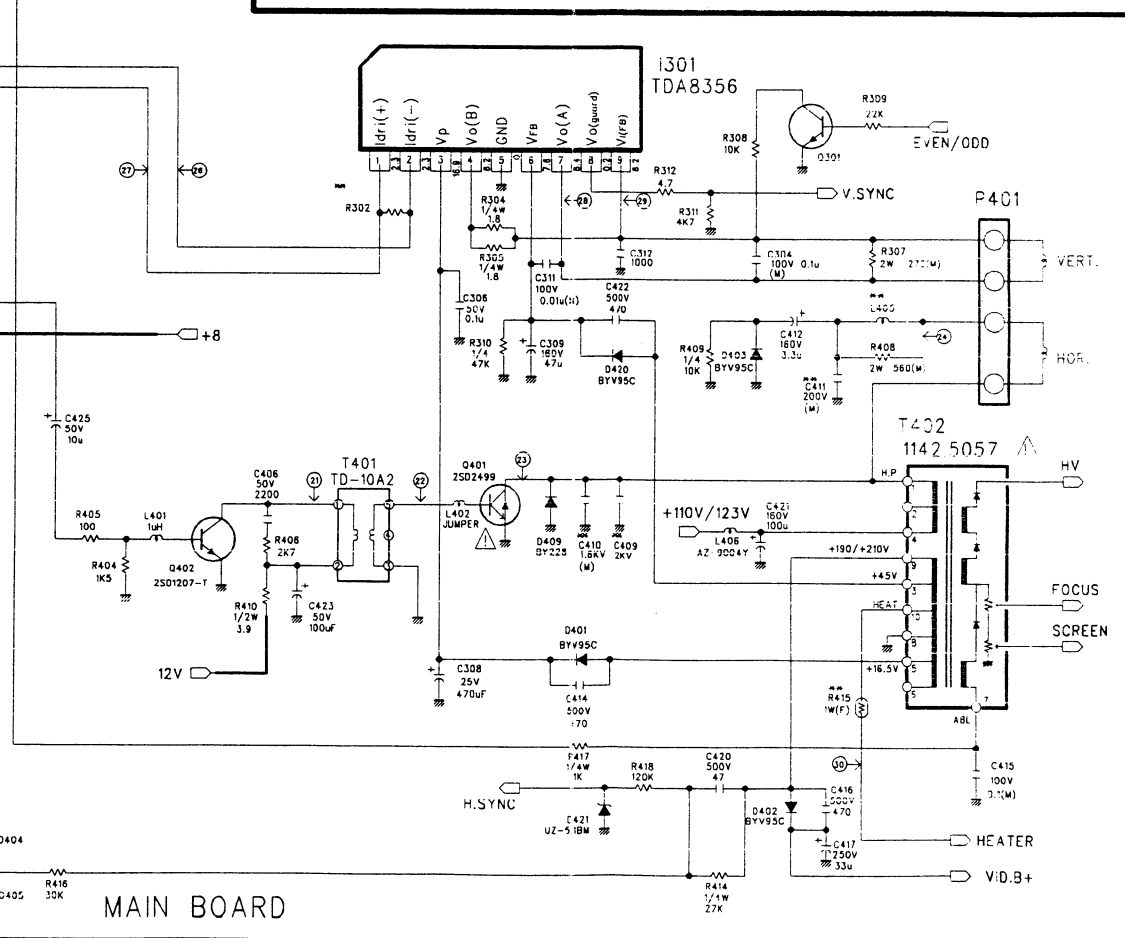
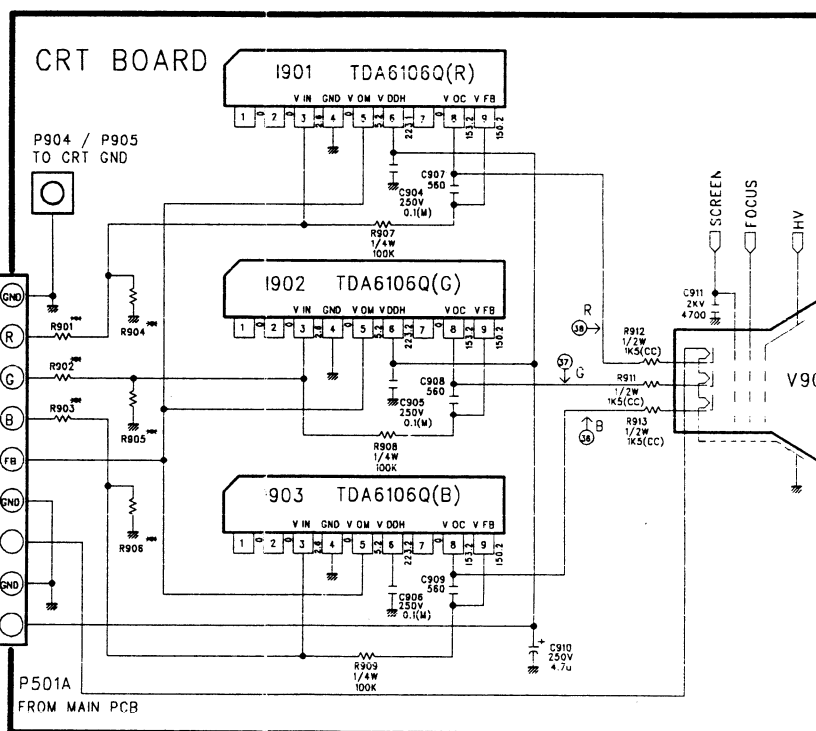
VID.B+

P501 TO CRT PCB

I501 TDA8374(A)

I502 TDA4665 (U3661M)

MAIN BOARD



SCHEMATIC DIAGRAM

CHASSIS : CP - 375

- * PAL - B/G
 - * PAL/SECAM - B/G, D/K
NTSC - 3.58/4.43 (AV)
 - * PAL/SECAM - B/G
SECAM - L
 - * PAL - I
- RUN NO.1 DEC . 1996

NOTES :

1. ALL RESISTORS ARE 1/6 WATT UNLESS OTHERWISE NOTED.
2. CAPACITANCE VALUES 1 AND ABOVE ARE IN pF EXCEPT AS INDICATED.
3. INDUCTOR VALUES ARE IN uH EXCEPT AS INDICATED.
4. ALL DIODE ARE 1N4148 EXCEPT AS INDICATED.
5. ALL NPN TRANSISTOR ARE KTC3198Y ALL PNP TRANSISTER ARE KTA1266Y EXCEPT AS INDICATED.
6. ALL THE DC VOLTAGES IN EACH POINT ARE MEASURED WITH DIGITAL VOLTMETER UNDER THE STANDARD PAL COLOUR BAR SIGNAL INPUT (5 CHANNEL) AND ALL CONTROLS SET TO THE MAXIMUM POSITION.
AT NOMINAL LINE VOLTAGE AC 230V 50HZ
7. SINCE THIS SCHEMATIC DIAGRAM IS A STANDARD ONE THE CIRCUIT AND CIRCUIT CONSTANTS MAY BE SUBJECT TO CHANGE FOR IMPROVEMENT WITHOUT ANY NOTICE.

SAFETY CAUTION :

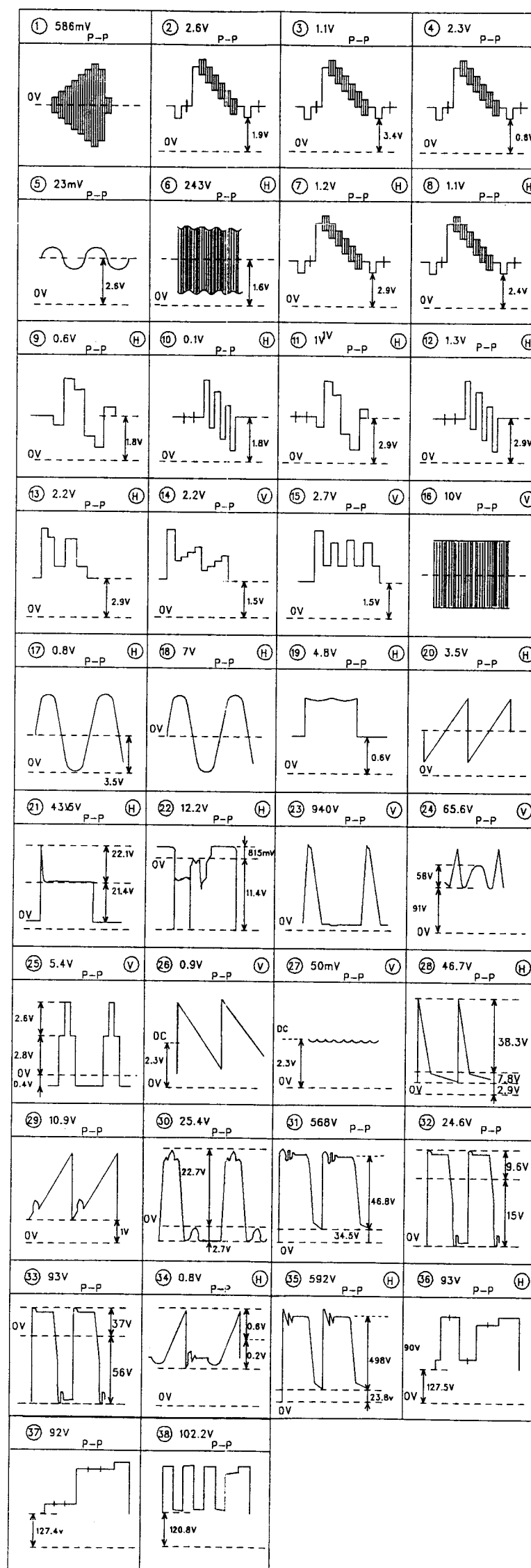
BEFORE SERVICING THIS CHASSIS IT IS IMPORTANT THAT THE SERVICE TECHNICIAN READ AND FOLLOW THE "X-RAY RADIATION PRECAUTION, "SAFETY PRECAUTIONS" AND "PRODUCT SAFETY NOTICE" IN THE SERVICE MANUAL.

PRODUCT SAFETY NOTE :

COMPONENTS MARKED WITH Δ ARE IMPORTANT FOR MAINTAINING THE SAFETY OF THE SET AND SHOULD BE REPLACED ONLY WITH TYPES IDENTICAL TO THOSE IN THE ORIGINAL OR SPECIFIED ONE IN THE PARTS LIST.
DON'T DEGRADE THE SAFETY OF THE SET THROUGH IMPROPER SERVICING.

WAVE FORMS

VIDEO : 8 STEP PAL COLOR BAR 87.5% AM
AUDIO : 1KHz SINE WAVE 60% FM



DIFFERENTIAL

NO	LOC	N
1	PWC1	POW
2	U101	TUNE
3	SF101	SAW
4	Z501	CERA
5	Z502	CERA
6	Z601	CERA
7	Z602	CERA
8	I501	IC V
9	I503	IC SE
10	C801	C LIN
11	C802	C LIN
12	XN01	X-TA
13	CN01	C CE
14	Q705	TR
15	Q706	TR
16	Q708	TR
17	Q709	TR
18	R729	R C-
19	R730	R C-
20	R732	R C-
21	R733	R C-
22	R736	R -C
23	R737	R C-
24	C104	C ELE
25	C105	C ELE
26	C106	C CER
27	C107	C ELE
28	C108	C CER
29	Z101	CERA
30	Z102	CERA
31	IL01	IC AM
32	SL01	SAW F
33	QL01	TR
34	QL02	TR
35	QL03	TR
36	Q702	TR
37	DL01	DIODE
38	DL02	DIODE
39	RL01	R C-F
40	RL02	R C-F
41	RL03	R C-F
42	RL04	R C-F
43	RL05	R C-F
44	RL06	R C-F
45	RL07	R C-F
46	RL08	R C-F
47	RL09	R C-F
48	RL10	R C-F
49	R101	R C-F
50	R712	R C-F
51	R713	R C-F
52	R752	R C-F
53	CL01	C CERA
54	CL02	C KECE
55	CL03	C CERA
56	CL04	C ELECE
57	CL05	C CERA
58	CL06	C ELECE
59	CL07	C CERA
60	C707	C ELECE
61	C728	C CERA
62	JP01	WIRE C
63	JP08	WIRE C
64	JP09	WIRE C
65	M721	SHIELD

DIFFERENT PART FOR SYSTEM

NAME	P-B/G [TF]	P/S-B/G/D/K N-3/4 (AV) [TK]	P-I [TU]	P/S-B/G S-L/L' [TA]
POWER CORD	CW4232	KKP419C	CW3222	CW4232
TUNER	3303KHC	3303KHC	DT2-IV17D	3303KHC
PAW FILTER	G1966M	K2950M	J1952M	G1966M
CERA FILTER	TPS5.5MB	TPS5.5MB	TPS6.0MB	TPS5.5MB
CERA FILTER	-	TPS6.5MB	-	-
CERA FILTER	SFSH5.5MCB-	SFSH5.5MCB-	SFE6.0MB	SFSH5.5MCB-
CERA FILTER	-	SFSH5.5MCB-	-	-
C VCD	TDAB374A	TDAB374A	TDA8374A	DTA8374
C SECAM	-	TDAB395	-	TDAB395
C LINE ACROSS	250V 0.47u	250V 0.1u	250V 0.47u	250V 0.47u
C LINE ACROSS	250V 0.47u	250V 0.1u	250V 0.47u	250V 0.47u
C-TAL	-	3.58MHz	-	-
C CERA	-	50V 220	-	-
C R	KTC3198C	KTC3198C	-	KTC3198Y
C R	KTC3198C	KTC3198C	-	KTC3198Y
C R	KTA1266Y	KTA1266Y	-	KTA1266Y
C R	KTA1266Y	KTA1266Y	-	KTA1266Y
C-FILM	33K	33K	-	33K
C-FILM	33K	33K	-	33K
C-FILM	4.7K	4.7K	-	4.7K
C-FILM	4.7K	4.7K	-	4.7K
C-FILM	4.7K	4.7K	-	4.7K
C-FILM	4.7K	4.7K	-	4.7K
ELECTRO	50V 4.7u	50V 4.7u	50V 4.7u	50V 33u
ELECTRO	50V 4.7u	50V 4.7u	-	50V 4.7u
CERA	25V 0.01u	25V 0.01u	-	25V 0.01u
ELECTRO	50V 4.7u	50V 4.7u	-	50V 4.7u
CERA	25V 0.01u	25V 0.01u	-	25V 0.01u
CERA FILTER	-	-	-	MKT40MA100P
CERA FILTER	-	-	-	MKT40MA100P
C AM DEMOD	-	-	-	STV8225
C PAW FILTER	-	-	-	L9461M
C R	-	-	-	KTC 3198Y
C R	-	-	-	KTC 3198Y
C R	-	-	-	KTC 3198Y
C R	-	-	-	KTC 3198Y
C ODE	-	-	-	MA859
C ODE	-	-	-	MA859
C-FILM	-	-	-	22K
C-FILM	-	-	-	100
C-FILM	-	-	-	2.2K
C-FILM	-	-	-	10K
C-FILM	-	-	-	10K
C-FILM	-	-	-	68K
C-FILM	-	-	-	1/4W 120
C-FILM	-	-	-	15K
C-FILM	-	-	-	750
C-FILM	-	-	-	2.2K
C-FILM	-	-	-	47
C-FILM	-	-	-	10K
C-FILM	-	-	-	4.7K
C-FILM	-	-	-	10K
CERA	-	-	-	50V 22
ELECTRO	-	-	-	50V 47u
CERA	-	-	-	50V 0.01u
ELECTRO	-	-	-	50V 4.7u
CERA	-	-	-	50V 22
ELECTRO	-	-	-	50V 4.7u
CERA	-	-	-	50V 82
ELECTRO	-	-	-	50V 10u
CERA	-	-	-	50V 16
C WIRE COPPER	-	WIRE COPPER	-	-
C WIRE COPPER	WIRE COPPER	WIRE COPPER	WIRE COPPER	-
C WIRE COPPER	WIRE COPPER	WIRE COPPER	WIRE COPPER	-
C WELD CASE	SPTH-C T0.25		SPTH-C T0.25	SPTH-C T0.25






DIFFERENT PARTS FOR SIZE

NO.	LOC.	14"			20"			21"		
		ORION	PHILIPS	POLKOLOR	ORION	SAMSUNG	POLKOLOR	ORION	PHILIPS	POLKOLOR
1	CRT	A34JLL90X	A34EAC01X	A34EFU13X	A48JLL90X	A48ECR11X	A48EEV33X	A51JSW90X	A51EAL55X	A51EER11X
2	SCT1	ISM003S	ISM003S	-	ISM003S	-	-	ISM003S	-	-
3	SCT2	-	-	ISHS09S	-	ISHS09S	ISHS09S	-	ISHS09S	ISHS09S
4	D/COIL	DC-1450	DC-1450	DC-1450	DC-2050	DC-2050	DC-2050	DC-2070	DC-2070	DC-2070
5	R801	ECPC1180M290	ECPC1180M290	ECPC1180M290	ECPC1180M290	ECPC1180M290	ECPC1180M290	ECPC1140M290	ECPC1140M290	ECPC1140M290
6	LP04	-	MD-5	MD-5	-	-	MD-5	MD-5	-	-
7	LP03	MD-5	-	-	MD-5	MD-5	-	-	MD-5	MD-5
8	L405	L-125	L-125	L-102	L-102	L-102	L-76	L-102	L-102	L-125
9	C409	2KV 470	2KV 470	2KV 470	2KV 470	2KV 1000	2KV 220	2KV 220	2KV 470	2KV 470
10	C410	1.6KV 7500	1.6KV 6200	1.6KV 6200	1.6KV 7500	1.6KV 8200	1.6KV 7200	1.6KV 6000	1.6KV 7500	1.6KV 6000
11	C411	200V 0.51	200V 0.51	250V 0.68	200V 0.47u	200V 0.51	200V 0.39u	200V 0.3u	200V 0.51	200V 0.47
12	R302	1/6W 1.8K	1/6W 1.8K	1/6W 2.2K	1/6W 2.2K	1/6W 2.2K	1/6W 2.2K	1/6W 2.7K	1/6W 2.7K	1/6W 2.2K
13	R413	1/4W 120K	1/4W 120K	1/4W 68K	1/4W 68K	1/4W 68K	1/4W 82K	1/4W 68K	1/4W 82K	1/4W 68K
14	R415	1W 1.2(F) A	1W 0.47(F)	1W 0.18(F)	1W 2.4(F) A	1W 1(F)	1W 0.47(F)	1W 1.2(F) A	2W 2.7(F) A	1W 1.2(F)
15	R807	1/4W 2.4K	1/4W 2.4K	1/4W 2.4K	1/4W 2.7K	1/4W 2.7K	1/4W 2.7K	1/4W 2.7K	1/4W 2.7K	1/4W 2.7K
16	R901-3	1/6W 3K	1/6W 3K	1/6W 3K	1/6W 2K	1/6W 2K	1/6W 2K	1/6W 2K	1/6W 2K	1/6W 2K
17	R904-6	1/6W 2K	1/6W 2K	1/6W 2K	1/6W 1.6K	1/6W 1.6K	1/6W 1.6K	1/6W 1.6K	1/6W 1.6K	1/6W 1.6K
18	P401	YFW500-05	YFW500-06	YFW500-06	YFW500-05	YFW500-06	YFW500-06	YFW500-06	YFW500-06	YFW500-06
19	P401A	-	35135/0620+ 35179+ULW =350	35135/0620+ 35179+ULW =350	-	ODY-2190	ODY-2190	-	ODY-2190	ODY-2190
20	ZZ132	1401H-1015-1P	1401H-1015-1P	1401H-1015-1P	2001H-1015-1P	2001H-1015-1P	2001H-1015-1P	2101H-1015-1P	2101H-1015-1P	2101H-1015-1P
21										
22										







DIFFERENT PART FOR SPEAKER (OPTION)

NO		1SPK	2SPK
1	SP01	3W 16 OHM	3W 8 OHM
2	SP02	-	3W 8 OHM
3	R608	1K	1.5K
4	LP01	-	BEAD
5	LP02	BEAD	-
6	SP06	WIRE COPPER	-
7	P602	-	YW025-03
8	MASKS	14/20/21A5	20T1,20T2
		14/20/21Q1	21T1,21T2




RESISTOR

CARBON FILM	
M-OXIDE FILM	 (M)
CARBON COMP	 (CC)
FUSIBLE	 (F)
CEMENT	 (C)

CAPACITOR

ELECTRO	
CERAMIC	
CERAMIC CH	 (CH)
TANTAL	 (T)
ELECTRO NONPOLAR	 (NP)
MYLAR	 (M)

COIL

PEAKING	
CHOKE	 (C)
BEAD	 (B)

■ Electrical Parts List



Components marked with this symbol must only be replaced by a component having identical physical characteristics.

MODEL : DTX-145TF

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
ZZ100	48B3228B03	TRANSMITTER REMOCON	R-28B03	
00030	47P7500001	BATTERY	AAM 1.5V	
ZZ131	58G0000084	COIL DEGAUSSING	DC-1450	△
ZZ132	48519A4610	CRT GROUND AS	1401H-1015-1P	
V901	48A96414P1	CRT BARE	A34JLL90X	△
PA601	4850703S03	CONN AS	YH025-	
SP01	4858312410	SPEAKER	SP-77A04	
C102	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C103	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11)	
C104	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11)	
C105	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11)	
C106	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C107	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11)	
C108	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C109	CEXF1H479V	C ELECTRO	50V RSS 4.7MF (5X11)	
C110	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C111	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
C115	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C116	CCZF1E223Z	C CERA	25V F 0.022MF Z (AXIAL)	
C117	CMXM2A473J	C MYLAR	100V 0.047MF J (TP)	
C118	CZCH1H100J	C CERA	50V CH 10PF J (AXIAL)	
C120	CEXD1H109F	C ELECTRO	50V RND 1MF (5X11) TP	
C301	CMXB2A104J	C MYLAR	100V EU 0.1MF J (TP)	
C302	CCZB1H181K	C CERA	50V B 180PF K (AXIAL)	
C303	CCZB1H181K	C CERA	50V B 180PF K (AXIAL)	
C304	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
C306	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C308	CEXF1E471V	C ELECTRO	25V RSS 470MF (10X16)	
C309	CEXF2C470V	C ELECTRO	160V RSS 47MF (13X25)	
C311	CMXM2A103J	C MYLAR	100V 0.01MF J (TP)	
C312	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C401	CBZR1C472M	C CERA	16V Y5R 4700PF M (AXIAL)	
C402	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C403	CBZR1C222M	C CERA	16V Y5R 2200PF M (AXIAL)	
C404	CCZB1H181K	C CERA	50V B 180PF K (AXIAL)	
C406	CCXB1H222K	C CERA	50V B 2200PF K	
C409	CCXB3D471K	C CERA	2KV B 470PF K	△
C410	CMYH3C752J	C MYLAR	1.6KV BUP 7500PF J	△
C411	CMYE2D514J	C MYLAR	200V PU 0.51MF J	△

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C412	CEXF2C339V	C ELECTRO	160V RSS 3.3MF (8X16)	
C414	CCXB2H471K	C CERA	500V B 470PF K	
C415	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
C416	CCXB2H471K	C CERA	500V B 470PF K	
C417	CEXF2E330V	C ELECTRO	250V RSS 33MF (13X25)	
C418	CCZF1E223Z	C CERA	25V F 0.022MF Z (AXIAL)	
C419	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11) TP	
C420	CXSL2H470J	C CERA	500V SL 47PF J	
C421	CEXF2C101V	C ELECTRO	160V RSS 100MF (16X25)	
C422	CCXB2H471K	C CERA	500V B 470PF K	
C423	CEXF1H101V	C ELECTRO	50V RSS 100MF (8X11.5) TP	
C424	CEXF1H478V	C ELECTRO	50V RSS 0.47MF (5X11)	
C425	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11) TP	
C501	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C502	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11) TP	
C503	CCZF1E223Z	C CERA	25V F 0.022MF Z (AXIAL)	
C504	CCZF1E223Z	C CERA	25V F 0.022MF Z (AXIAL)	
C505	CEXF1E101V	C ELECTRO	25V RSS 100MF	
C506	CCZF1H473Z	C CERA	50V F 0.047MF Z (AXIAL)	
C507	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C508	CCZF1H473Z	C CERA	50V F 0.047MF Z (AXIAL)	
C509	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
C510	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
C511	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
C512	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C514	CCZB1H151K	C CERA	50V B 150PF K (AXIAL)	
C516	CBXF1H104Z	C CERA SEMI	50V F 0.1MF Z	
C517	CBZR1C472M	C CERA	16V Y5R 4700PF M (AXIAL)	
C518	CZCH1H180J	C CERA	50V CH 18PF J (AXIAL)	
C519	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C520	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C521	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C522	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C523	CCZF1E223Z	C CERA	25V F 0.022MF Z (AXIAL)	
C524	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C525	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11)	
C526	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
C527	CMXB1H224J	C MYLAR	50V EU 0.22MF J (TP)	
C528	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C529	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11)	
C530	CEXF1H109V	C ELECTRO	50V RSS 1MF (5X11) TP	
C531	CCZF1H473Z	C CERA	50V F 0.047MF Z (AXIAL)	
C532	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	

LOC	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C533	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C604	CCZB1H221K	C CERA	50V B 220PF K (AXIAL)	
C605	CZSL1H560J	C CERA	50V SL 56PF J (AXIAL)	
C606	CZSL1H680J	C CERA	50V SL 68PF J (AXIAL)	
C607	CEXD1H100F	C ELECTRO	50V RND 10MF (8X11.5)	
C609	CCZB1H181K	C CERA	50V B 180PF K (AXIAL)	
C610	CEXF1H229V	C ELECTRO	50V RSS 2.2MF (5X11)	
C611	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11)	
C612	CBZR1C392M	C CERA	16V Y5R 3900PF M (AXIAL)	
C613	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C614	CCZF1E223Z	C CERA	25V F 0.022MF Z (AXIAL)	
C615	CEXF1E471V	C ELECTRO	25V RSS 470MF (10X16)	
C616	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C617	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C618	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C620	CEXD1H229F	C ELECTRO	50V RND 2.2MF (5X11)	
C621	CEXD1H229F	C ELECTRO	50V RND 2.2MF (5X11)	
C622	CEXD1H229F	C ELECTRO	50V RND 2.2MF (5X11)	
C623	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11)	
C624	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C626	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C631	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C632	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C633	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C634	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C636	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C637	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C638	CEXD1H229F	C ELECTRO	50V RND 2.2MF (5X11)	
C639	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C640	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C641	CCZB1H101K	C CERA	50V B 100PF K (AXIAL)	
C701	CEXF1H220V	C ELECTRO	50V RSS 22MF (5X11)	
C702	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11)	
C703	CZCH1H150J	C CERA	50V CH 15PF J (AXIAL)	
C704	CZCH1H150J	C CERA	50V CH 15PF J (AXIAL)	
C705	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C706	CEXF1H100V	C ELECTRO	50V RSS 10MF (5X11)	
C709	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C710	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
C711	CMXM2A104J	C MYLAR	100V 0.1MF J (TP)	
C712	CEXF1H470V	C ELECTRO	50V RSS 47MF (6.3X11)	
C713	CCXF1H103Z	C CERA	50V F 0.01MF Z	
C714	CMXB1H333J	C MYLAR	50V EU 0.033MF J (TP)	

LOG	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C715	CMXB1H224J	C MYLAR	50V EU 0.22MF J (TP)	
C716	CMXB1H333J	C MYLAR	50V EU 0.033MF J (TP)	
C717	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C718	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11)	
C719	CMXB1H334J	C MYLAR	50V EU 0.33MF J (TP)	
C720	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C721	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11)	
C722	CZSL1H390J	C CERA	50V SL 39PF J (AXIAL)	
C723	CZSL1H360J	C CERA	50V SL 36PF J (AXIAL)	
C724	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C725	CEXF1E470V	C ELECTRO	25V RSS 47MF (5X11)	
C726	CEXF1E471V	C ELECTRO	25V RSS 470MF (10X16)	
C727	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C801-2	CL1JB3474K	C LINE ACROSS	AC250V 0.47MF	△
C803	CCXE2H472P	C CERA	500V E 4700PF P	△
C804	CCXE2H472P	C CERA	500V E 4700PF P	△
C805	CEYM2G121T	C ELECTRO	400V LWF 120MF	△
C806	CCYR3D471K	C CERA	HIKR 2KV 470PF K 125C	△
C807	CEXF1E221V	C ELECTRO	25V RSS 220MF	
C808	CEXF2A100V	C ELECTRO	100V RSS 10MF (6.3X11) TP	
C809	CEXF1E101V	C ELECTRO	25V RSS 100MF (6.3X11)	
C810	CCZB1H102K	C CERA	50V B 1000PF K (AXIAL)	
C811	CEXF1E221V	C ELECTRO	25V RSS 220MF (8X11.5)	
C812	CH1FFE472M	C CERA AC	4.0KV 4700PF M KD	
C817	CCYR3D681K	C CERA	2KV R 680PF K 125C	△
C818	CEXF2C101V	C ELECTRO	160V RSS 100MF (16X25)	
C821	CEXF1H471V	C ELECTRO	50V RSS 470MF (13X20)	
C823	CEXF1E102C	C ELECTRO	25V RUS 1000MF (13X20)	
C824	CEXF1E101C	C ELECTRO	25V RUS 100MF (6.3X11)	
C825	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C826	CEXF1E470C	C ELECTRO	25V RUS 47MF (5X11)	
C827	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C829	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C830	CEXF1E101C	C ELECTRO	25V RUS 100MF (6.3X11)	
C831	CCXF1H103Z	C CERA	50V F 0.01MF Z	
C832	CCZF1E103Z	C CERA	25V F 0.01MF Z (AXIAL)	
C835	CBZF1H104Z	C CERA SEMI	50V F 0.1MF Z (AXIAL)	
C904	CMXL2E104K	C MYLAR	250V MEU 0.1MF K	
C905	CMXL2E104K	C MYLAR	250V MEU 0.1MF K	
C906	CMXL2E104K	C MYLAR	250V MEU 0.1MF K	
C907	CCXB1H561K	C CERA	50V B 560PF K	
C908	CCXB1H561K	C CERA	50V B 560PF K	
C909	CCXB1H561K	C CERA	50V B 560PF K	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
C911	CCYB3D472K	C CERA	2KV B 4700PF K	
D101	D1N4148—	DIODE	1N4148 (TAPPING)	
D401	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D402	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D403	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D404	D1N4148—	DIODE	1N4148 (TAPPING)	
D405	D1N4148—	DIODE	1N4148 (TAPPING)	
D406	D1N4148—	DIODE	1N4148 (TAPPING)	
D409	DBY228—	DIODE	BY228 (TAPPING)	△
D420	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D421	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D501	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D502	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D503	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D504	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D505	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D506	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D507	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D508	DUZ5R6BM—	DIODE ZENER	UZ-5.6BM(TAPPING)	
D509	D1N4148—	DIODE	1N4148 (TAPPING)	
D510	D1N4148—	DIODE	1N4148 (TAPPING)	
D511	DUZ6R2BM—	DIODE ZENER	UZ-6.2BM	
D512	DUZ6R2BM—	DIODE ZENER	UZ-6.2BM	
D601	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D602	DUZ5R1BM—	DIODE ZENER	UZ-5.1BM	
D701	D1N4148—	DIODE	1N4148 (TAPPING)	
D702	D1N4148—	DIODE	1N4148 (TAPPING)	
D703	D1N4148—	DIODE	1N4148 (TAPPING)	
D704	D1N4148—	DIODE	1N4148 (TAPPING)	
D705	DUZ6R2BM—	DIODE ZENER	UZ-6.2BM	
D706	DKLR114L—	LED	KLR114L	
D707	DUZ6R2BM—	DIODE ZENER	UZ-6.2BM	
D708	DUZ6R2BM—	DIODE ZENER	UZ-6.2BM	
D801-4	D1S1888—	DIODE	1S1888 (TAPPING)	△
D805	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D806	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D807	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D808	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D811	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D812	DBYV95C—	DIODE	BYV95C (TAPPING)	△
D813	DBYV95C—	DIODE	BYV95C (TAPPING)	△
F801	5FSCB4022R	FUSE CERA	SEMKO F4AH 4A 250V	△
F801A-B	4857415001	CLIP FUSE	PFC5000-0702	△

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
I301	1TDA8356—	IC VERTICAL	TDA8356	
I301A	4857024617	HEAT SINK	AL EX	
I501	1TDA8374A-	IC VCD	TDA8374A	
I502	1TDA4665V4	IC DELAY	TDA4665/V4	
I601	1TDA7056—	IC	TDA7056	
I701	1DW5255M2-	IC MICOM	DW5255M2	
I702	1UPC574J—	IC	UPC574J	
I703	124LC08B—	IC MEMORY	24LC08B	
I704	1TFMW5380-	IC PREAMP	TFMW5380	
I801	1STRS5707-	IC POWER	STR-S5707	△
I802	1TDA8138—	IC REGULATOR	TDA8138	
I802A	4857025401	HEAT SINK	A1050P-H24 T2	
I803	1KA7808—	IC REGULATOR	KA7808	
I804	1LTV817C—	IC PHOTO COUPLER	LTV-817C	△
I901	1TDA6106Q-	IC AMP	TDA6106Q	
I902	1TDA6106Q-	IC AMP	TDA6106Q	
I903	1TDA6106Q-	IC AMP	TDA6106Q	
J006-009	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J012-016	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J018-020	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J022-025	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J027-028	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J030-040	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J042	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J044-054	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J057-062	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J062-070	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J072	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J074-077	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J080-091	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J093-102	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J106	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J109	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J111-113	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J115-119	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
J123	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
JH01	4859102130	JACK EARPHONE	YSC-1537	
JP06	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
JP08	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
JP09	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
JS01	4859200401	SOCKET RGB	SR-21A1 (ANGLE TYPE)	
JS02	4859108350	JACK PIN BOARD	YSC02P-4100-14A	
L101	58C9780027	COIL CHOKE	TRF-1201B (0.97 UH)	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
L103	5CPZ100K04	COIL PEAKING	10UH 10.5MM K	
L104	58E0000S37	COIL AFT	TRF-A001	
L301	5CPZ100K04	COIL PEAKING	10UH 10.5MM K	
L302	5CPZ100K04	COIL PEAKING	10UH 10.5MM K	
L401	5CPZ109M02	COIL PEAKING	1UH M (AXIAL 3.5MM)	
L402	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
L405	58H0000018	COIL H-LINEARITY	L-125 (125UH)	
L406	58C9430599	COIL CHOKE	AZ-9004Y(94MH)	
L501	5CPZ569K02	COIL PEAKING	5.6UH K (AXIAL 3.5MM)	
L601	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L602	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L604	5CPZ829K02	COIL PEAKING	8.2UH K (AXIAL 3.5MM)	
L605	5CPZ100K04	COIL PEAKING	10UH 10.5MM K	
L606	5CPZ100K04	COIL PEAKING	10UH 10.5MM K	
L607	5CPZ100K04	COIL PEAKING	10UH 10.5MM K	
L608	58C6R8J067	COIL CHOKE	TRF-1015C (6.8UH J)	
L609	5CPZ100K04	COIL PEAKING	10UH 10.5MM K	
L610	58C6R8J067	COIL CHOKE	TRF-1015C (6.8UH J)	
L701	5CPZ689K02	COIL PEAKING	6.8UH K (AXIAL 3.5MM)	
L801	5PLF20A1—	FILTER LINE	LF-20A1	△
L802	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
L803	85801065GY	WIRE COPPER	AWG22 1/0.65 TIN	
L804	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
L805	5CPZ100K04	COIL PEAKING	10UH 10.5MM K	
LP02	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
LP03	5MC0000100	COIL BEAD	MD-5 (HC-3550)	
M721	4857235802	SHIELD CASE	SPTH-C ("B+C") HOLE	
P101	485923162S	CONN WAFER	YW025-03 (STICK)	
P401	4859240020	CONN WAFER	YFW500-05	
P501	485923522S	CONN WAFER	YW025-09 (STICK)	
P501A	4850709S02	CONN AS	YH02509+YST025+ULW=300	
P601	485923162S	CONN WAFER	YW025-03 (STICK)	
P801	4859242220	CONN WAFER	YFW800-02	
P802	4859242220	CONN WAFER	YFW800-02	
P904	4859262120	CONN WAFER	YFW800-01	
PWC1	4859903110	CORD POWER AS		△
Q301	TKTC3198Y-	TR	KTC3198Y	
Q401	T2SD2499—	TR	2SD2499	△
Q402	T2SD1207T-	TR	2SD1207-T (TAPPING)	△
Q501	TKTC3198Y-	TR	KTC3198Y	
Q502	TKTC3198Y-	TR	KTC3198Y	
Q503	TKTC3198Y-	TR	KTC3198Y	
Q504	TKTA1266Y-	TR	KTA1266Y (TP)	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
Q505	TKTC3198Y-	TR	KTC3198Y	
Q601	TKTC3198Y-	TR	KTC3198Y	
Q602	TKTC3198Y-	TR	KTC3198Y	
Q603	TKTC3198Y-	TR	KTC3198Y	
Q604	TKTC3198Y-	TR	KTC3198Y	
Q701	TKTC3198Y-	TR	KTC3198Y	
Q704	TKTC3202Y-	TR	KTC3202Y (TP)	
Q705	TKTC3198Y-	TR	KTC3198Y	
Q706	TKTC3198Y-	TR	KTC3198Y	
Q707	TKTC3198Y-	TR	KTC3198Y	
Q708	TKTA1266Y-	TR	KTA1266Y (TP)	
Q709	TKTA1266Y-	TR	KTA1266Y (TP)	
Q710	TKTA1266Y-	TR	KTA1266Y (TP)	
Q801	TKTC3198Y-	TR	KTC3198Y	
Q802	TKTC3198Y-	TR	KTC3198Y	
Q803	TKTC3198Y-	TR	KTC3198Y	
Q804	TKTC3198Y-	TR	KTC3198Y	
R106	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R107	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
R108	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R109	RD-AZ183J-	R CARBON FILM	1/6 18K OHM J	
R110	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J	
R111	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R112	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R301	RD-AZ393J-	R CARBON FILM	1/6 39K OHM J	
R302	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J	
R304	RD-4Z189J-	R CARBON FILM	1/4 1.8 OHM J	
R305	RD-4Z189J-	R CARBON FILM	1/4 1.8 OHM J	
R307	RS02Z271J-	R M-OXIDE FILM	2W 270 OHM J	
R308	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R309	RD-AZ223J-	R CARBON FILM	1/6 22K OHM J	
R310	RD-4Z473J-	R CARBON FILM	1/4 47K OHM J	
R311	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R312	RD-AZ479J-	R CARBON FILM	1/6 4.7 OHM J	
R401	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R402	RD-AZ303J-	R CARBON FILM	1/6 30K OHM J	
R403	RD-AZ479J-	R CARBON FILM	1/6 4.7 OHM J	
R404	RD-AZ152J-	R CARBON FILM	1/6 1.5K OHM J	
R405	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R406	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
R408	RS02Z561J-	R M-OXIDE FILM	2W 560 OHM J	
R409	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	
R410	RD-2Z399J-	R CARBON FILM	1/2 3.9 OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R411	85801065GY	WIRE COPPER	AWG22 1/0.65	△
R412	85801065GY	WIRE COPPER	AWG22 1/0.65	
R413	RD-4Z124J-	R CARBON FILM	1/4 120K OHM J	
R414	RD-4Z273J-	R CARBON FILM	1/4 27K OHM J	
R415	RF01Z129JA	R FUSIBLE	1W 1.2 OHM J A CURVE	
R416	RD-AZ303J-	R CARBON FILM	1/6 30K OHM J	
R417	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R418	RD-AZ124J-	R CARBON FILM	1/6 120K OHM J	
R420	85801065GY	WIRE COPPER	AWG22 1/0.65	
R501	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R502	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R503	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R504	RD-AZ331J-	R CARBON FILM	1/6 330 OHM J	
R505	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
R506	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R507	RD-4Z109J-	R CARBON FILM	1/4 1 OHM J	
R508	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R509	RD-AZ121J-	R CARBON FILM	1/6 120 OHM J	
R510	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R511	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R512	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R513	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R514	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R515	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R516	RD-AZ564J-	R CARBON FILM	1/6 560K OHM J	
R517	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R518	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R519	RD-AZ470J-	R CARBON FILM	1/6 47 OHM J	
R520	RD-AZ394J-	R CARBON FILM	1/6 390K OHM J	
R521	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R524	RD-AZ303J-	R CARBON FILM	1/6 30K OHM J	
R525	RD-AZ121J-	R CARBON FILM	1/6 120 OHM J	
R526	RD-4Z100J-	R CARBON FILM	1/4 10 OHM J	
R527	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R528	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R529	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R530	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R531	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R532	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R533	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R534	RD-AZ750J-	R CARBON FILM	1/6 75 OHM J	
R535	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R536	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R537	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R538	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R539	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R540	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R541	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
R542	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
R543	RD-AZ151J-	R CARBON FILM	1/6 150 OHM J	
R601	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R602	RD-AZ561J-	R CARBON FILM	1/6 560 OHM J	
R603	RD-AZ681J-	R CARBON FILM	1/6 680 OHM J	
R604	RD-AZ562J-	R CARBON FILM	1/6 5.6K OHM J	
R605	RD-AZ270J-	R CARBON FILM	1/6 27 OHM J	
R606	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J	
R607	RD-AZ113J-	R CARBON FILM	1/6 11K OHM J	
R608	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R609	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R610	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R611	85801065GY	WIRE COPPER	AWG22 1/0.65	
R612	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	
R613	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	
R614	RD-AZ153J-	R CARBON FILM	1/6 15K OHM J	
R615	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R616	RD-4Z221J-	R CARBON FILM	1/4 220 OHM J	
R617	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R618	RD-AZ222J-	R CARBON FILM	1/6 2.2K OHM J	
R619	RD-AZ471J-	R CARBON FILM	1/6 470 OHM J	
R620	RD-AZ221J-	R CARBON FILM	1/6 220 OHM J	
R621	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R622	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R623	RD-4Z221J-	R CARBON FILM	1/4 220 OHM J	
R639	RD-AZ182J-	R CARBON FILM	1/6 1.8K OHM J	
R701	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R702	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R703	RD-AZ332J-	R CARBON FILM	1/6 3.3K OHM J	
R704	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R705	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R706	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R707	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R708	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R709	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R710	RD-AZ100J-	R CARBON FILM	1/6 10 OHM J	
R711	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
R714	85801065GY	WIRE COPPER	AWG22 1/0.65	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R715	RD-AZ912J-	R CARBON FILM	1/6 9.1K OHM J	
R716	RD-AZ823J-	R CARBON FILM	1/6 82K OHM J	
R717	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R718	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R719	RD-4Z103J-	R CARBON FILM	1/4 10K OHM J	
R720	RS02Z562J-	R M-OXIDE FILM	2W 5.6K OHM J	
R721	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R722	RD-AZ822J-	R CARBON FILM	1/6 8.2K OHM J	
R723	RD-AZ682J-	R CARBON FILM	1/6 6.8K OHM J	
R724	RD-AZ100J-	R CARBON FILM	1/6 10 OHM J	
R725	RD-AZ104J-	R CARBON FILM	1/6 100K OHM J	
R727	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R728	RD-4Z100J-	R CARBON FILM	1/4 10 OHM J	
R729	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
R730	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
R731	RD-AZ333J-	R CARBON FILM	1/6 33K OHM J	
R732	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R733	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R734	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R735	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R736	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R737	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R738	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R739	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R740	RD-AZ122J-	R CARBON FILM	1/6 1.2K OHM J	
R741	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R743	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R744	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R745	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R746	RD-AZ272J-	R CARBON FILM	1/6 2.7K OHM J	
R748	RD-AZ622J-	R CARBON FILM	1/6 6.2K OHM J	
R749	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R750	RD-AZ101J-	R CARBON FILM	1/6 100 OHM J	
R751	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R753	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R754	RS02Z562J-	R M-OXIDE FILM	2W 5.6K OHM J	
R755	RD-AZ109J-	R CARBON FILM	1/6 1 OHM J	
R756	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R757	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R759	RD-AZ391J-	R CARBON FILM	1/6 390 OHM J	
R760	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R762	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R801	DEC180M290	POSISTOR	ECPCC180M290	△

LOC	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
R802	RX10B339JN	R CEMENT	10W 3.3 OHM J BENCH	△
R803	RS02Z683J-	R M-OXIDE FILM	2W 68K OHM J	△
R804	RF02Z568J-	R FUSIBLE	2W 0.56 OHM J	
R805	RS01Z300J-	R M-OXIDE FILM	1W 30 OHM J	△
R806	RD-4Z101J-	R CARBON FILM	1/4 100 OHM J	
R807	RD-4Z242J-	R CARBON FILM	1/4 2.4K OHM J	
R808	RD-4Z104J-	R CARBON FILM	1/4 100K OHM J	
R809	RD-4Z222J-	R CARBON FILM	1/4 2.2K OHM J	
R810	RD-4Z220J-	R CARBON FILM	1/4 22 OHM J	
R811	RD-4Z102J-	R CARBON FILM	1/4 1K OHM J	
R812	RC-2Z565J-	R CARBON COMP	1/2 5.6M OHM J	
R813	RD-AZ473J-	R CARBON FILM	1/6 47K OHM J	
R814	RD-4Z242J-	R CARBON FILM	1/4 2.4K OHM J	
R815	RD-2Z104J-	R CARBON FILM	1/2 100K OHM J	
R816	RD-2Z104J-	R CARBON FILM	1/2 100K OHM J	
R817	RD-AZ102J-	R CARBON FILM	1/6 1K OHM J	
R818	RD-AZ472J-	R CARBON FILM	1/6 4.7K OHM J	
R819	RS02Z620J-	R M-OXIDE FILM	2W 62 OHM J	
R820	RD-AZ103J-	R CARBON FILM	1/6 10K OHM J	
R901	RD-AZ302J-	R CARBON FILM	1/6 3K OHM J	
R902	RD-AZ302J-	R CARBON FILM	1/6 3K OHM J	
R903	RD-AZ302J-	R CARBON FILM	1/6 3K OHM J	
R904	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R905	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R906	RD-AZ202J-	R CARBON FILM	1/6 2K OHM J	
R907	RD-4Z104J-	R CARBON FILM	1/4 100K OHM J	
R908	RD-4Z104J-	R CARBON FILM	1/4 100K OHM J	
R909	RD-4Z104J-	R CARBON FILM	1/4 100K OHM J	
R911	RC-2Z152J-	R CARBON COMP	1/2 1.5K OHM J	△
R912	RC-2Z152J-	R CARBON COMP	1/2 1.5K OHM J	
R913	RC-2Z152J-	R CARBON COMP	1/2 1.5K OHM J	
R920	85801065GY	WIRE COPPER	AWG22 1/0.65	
SCT1	4859303030	SOCKET CRT	ISMM03S	
SF101	5PG1966M—	FILTER SAW	G1966M	
SW701-5	5S50101090	SW TACT	SKHV17910A	
SW801	5S40101143	SW PUSH	PS3-22SP (P.C.B)	
T401	50D10A2—	TRANS DRIVE	TD-10A2	
T402	50H0000177	FBT	HST1142.5057	
T801	50M3934A1-	TRANS SMPS	TSM-3934A1	△
U101	4859714430	TUNER VARACTOR	3303KHC-3X1289	
X501	5XE4R4336E	CRYSTAL QUARTZ	HC-49/U 4.433619MHZ 30PPM	
X701	5XE18R000E	CRYSTAL QUARTZ	HC-49/U 18.000MHZ 30PPM	
Z501	5PXPS5R5MB	FILTER CERA	TPS5.5MB-TF21 (TP)	

LOC.	PART-CODE	PART-NAME	PART-DESCRIPTION	REMARK
Z601	5PXFSH5R5M	FILTER CERA	SFSH5.5MCB-TF21 (TP)	

Difference of Parts for CRT

NO	LOC	NAME	14" OEC	14" Polkolor	14" PHILIPS	20" OEC	20" Polkolor	21" OEC	21" Polkolor	21" PHILIPS
1	V901	CRT BARE	A34JLL90X 48A96414P1	A34EFU13X01 4859606640	A34EAC01X	A48JLL90X01	A48EEV33X01	A51JSW90X02	A51EBV13X09	A51EAL55X01
2	SCT1	SOCKET CRT	ISMM03S 4859303030	—	ISMM03S 4859303030	ISMM03S 4859303030	—	ISMM03S 4859303030	—	—
3	SCT2	SOCKET CRT	—	ISHS09S 4859302930	—	—	ISHS09S 4859302930	—	ISHS09S 4859302930	ISHS09S 4859302930
4	LP03	COIL BEAD	MD-5 5MC0000100	—	—	MD-5 5MC0000100	—	—	MD-5 5MC0000100	MD-5 5MC0000100
5	LP04	COIL BEAD	—	MD-5 5MC0000100	MD-5 5MC0000100	—	MD-5 5MC0000100	MD-5 5MC0000100	—	—
6	L405	COIL H-LIN.	L-125 58H0000018	L-102 58H0000016	L-102 58H0000016	L-102 58H0000016	L-76 58H0000020	L-102 58H0000016	L-125 58H0000018	L-102 58H0000016
7	C410	C MYLAR	1.6KV 7500 CMYH3C752J	1.6KV 6200 CMYH3C622J	1.6KV 6200 CMYH3C622J	1.6KV 7500 CMYH3C752J	1.6KV 7200 CMYH3C722J	1.6KV 6000 CMYH3C602J	1.6KV 6900 CMYH3C692J	1.6KV 7500 CMYH3C752J
8	C409	C CERA	2KV 470 CCXB3D471K	2KV 470 CCXB3D471K	2KV 470 CCXB3D471K	2KV 470 CCXB3D471K	2KV 220 CCXB3D221K	2KV 470 CCXB3D471K	2KV 470 CCXB3D471K	2KV 470 CCXB3D471K
9	C411	C MYLAR	200V 0.51 CMYE2D514J	250V 0.68 J CMYT2E684J	200V 0.51 CMYE2D514J	200V 0.47 CMYE2D474J	200V 0.39 CMYE2D394J	200V 0.3 CMYE2D304J	200V 0.51 CMYE2D514J	200V 0.51 CMYE2D514J
10	R413	R C-FILM	1/4W 120K RD-4Z124J-	1/4W 68K RD-4Z683J	1/4W 82K RD-4Z823J	1/4W 68K RD-4Z683J	1/4W 82K RD-4Z823J	1/4W 68K RD-4Z683J	1/4W 68K RD-4Z683J	1/4W 68K RD-4Z683J
11	R415	R FUSIBLE	1W 1.2 A (F) RF01Z129JA	1W 0.18 (F) RF01Z188J-	1W 0.47 (F) RF01Z478J-	1W 2.4 A (F) RF01Z249JA	1W 0.47 (F) RF01Z478J-	1W 1 (F) RF01Z109J-	1W 1.2 A (F) RF01Z129JA	1W 2.7 A (F) RF01Z279JA
12	R302	R C-FILM	1/6W 1.8K RD-AZ182J-	1/6W 2.2K RD-AZ222J	1/6W 1.8K RD-AZ182J-	1/6W 2.2K RD-AZ222J	1/6W 2.2K RD-AZ222J	1/6W 2.7K RD-AZ272J	1/6W 2.2K RD-AZ272J	1/6W 2.7K RD-AZ272J
13	R901-3	R C-FILM	1/6W 3K RD-AZ302J-	1/6W 3K RD-AZ302J-	1/6W 3K RD-AZ302J-	1/6W 2K RD-AZ202J-	1/6W 2K RD-AZ202J-	1/6W 2K RD-AZ202J-	1/6W 2K RD-AZ202J-	1/6W 2K RD-AZ202J-
14	R904-6	R C-FILM	1/6W 2K RD-AZ202J-	1/6W 2K RD-AZ202J-	1/6W 2K RD-AZ202J-	1/6W 1.6K RD-AZ162J-	1/6W 1.6K RD-AZ162J-	1/6W 1.6K RD-AZ162J-	1/6W 1.6K RD-AZ162J-	1/6W 1.6K RD-AZ162J-
15	R807	R C-FILM	1/4W 2.4K RD-4Z242J-	1/4W 2.4K RD-4Z242J-	1/4W 2.4K RD-4Z242J-	1/4W 2.7K RD-4Z272J-	1/4W 2.7K RD-4Z272J-	1/4W 2.7K RD-4Z272J-	1/4W 2.7K RD-4Z272J-	1/4W 2.7K RD-4Z272J-
16	P401	CONN WAFER	YFW500-05 4859240020	YFW500-06 4859240120	YFW500-06 4859240120	YFW500-05 4859240020	YFW500-06 4859240120	YFW500-06 4859240120	YFW500-06 4859240120	YFW500-06 4859240120
17	P401A	CONN AS	—	35135/0620 +35179 +ULW=350 4850706S20	35135/0620 +35179 +ULW=350 4850706S20	—	ODY-2109 4850706057	—	ODY-2109 4850706057	ODY-2109 4850706057
18	ZZ131	COIL DEGAUSS	DC1450 58G0000084	DC1450 58G0000084	DC1450 58G0000084	DC2050 58G0000086	DC2050 58G0000086	DC2070 58G0000074	DC2070 58G0000074	DC2070 58G0000074
19	P801	POSISTOR	ECPC 180M290 DEC180M290	ECPC 180M290 DEC180M290	ECPC 180M290 DEC180M290	ECPC 180M290 DEC180M290	ECPC 180M290 DEC180M290	ECPC 140M290 DEC140M290	ECPC 140M290 DEC140M290	ECPC 140M290 DEC140M290
20	ZZ132	CRT GND AS	1401H-1015-1P 48519A4610	1401H-1015-1P 48519A4610	1401H-1015-1P 48519A4610	2001H-1015-1P 48519A5010	2001H-1015-1P 48519A5010	2101H-1015-1P 48519A5210	2101H-1015-1P 48519A5210	2101H-1015-1P 48519A5210
21	C910	C ELECTRO	—	—	—	—	—	250V RSS 33MF CEXF2E330V	—	—

Difference of Parts for System

NO	LOC	NAME	TF	TK	TU	TA
1	PWC1	POWER CORD AS	CW4232 4859903110	KKP419C 4859902910	CW3222 4859905110	CW4232 4859903110
2	SF101	SAW FILTER	G1966M 5PG1966M—	K2950M 5PK2950M—	J1952M 5PJ1952M-	G1966M 5PG1966M—
3	Z501	CERA. FILTER	TPS5.5MB-TF21 5PXPS5R5MB	TPS5.5MB-TF21 5PXPS5R5MB	TPS6.0MB 5PTPS60MB-	TPS5.5MB-TF21 5PXPS5R5MB
4	Z601	CERA. FILTER	SFSH5.5MCB-TF21 5PXF5H5R5M	SFSH5.5MCB-TF21 5PXF5H5R5M=	SFSH6.0MCB-TF21 5PXF5H6R0M	SFSH5.5MCB-TF21 5PXF5H5R5M
5	I503	IC SECAM	-	TDA8395 1TDA8395—	-	TDA8395 1TDA8395—
6	M721	SHIELD CASE	SPTH-C T0.25 4857235802	-	SPTH-C T0.25 4857235802	SPTH-C T0.25 4857235802
7	C801	C LINE ACROSS	AC 250V 0.47u CL1JB3474K	AC 250V 0.1u CL1JB3104M	AC 250V 0.47u CL1JB3474K	AC 250V 0.47u CL1JB3474K
8	C802	C LINE ACROSS	AC 250V 0.47u	AC 250V 0.1u	AC 250V 0.47u	AC 250V 0.47u
9	C805	C ELECTRO	400V LWF 120MF CEYM2G121T	450V LHS 150MF CEYN2W151P	400V LWF 120MF CEYM2G121T	400V LWF 120MF CEYM2G121T
10	XN01	X-TAL	-	HC-49/U 3.579545MHz 5XE3R5795E	-	-
11	CN01	C CERA	-	50V CH 220 CXCH1H221J	-	-
12	Z502	CERA. FILTER	-	TPS6.5MB 5PTPS65MB-	-	-
13	Z602	CERA. FILTER	-	SFSH6.5MCB-TF21 5PXF5H6R5M	-	-
14	JP01	WIRE COPPER	-	WIRE COPPER	-	-
15	Q705	TR	KTC3198Y TKTC3198Y-	KTC3198Y TKTC3198Y-	-	KTC3198Y TKTC3198Y-
16	Q706	TR	KTC3198Y	KTC3198Y	-	KTC3198Y
17	Q708	TR	KTA1266Y TKTA1266Y-	KTA1266Y TKTA1266Y-	-	KTA1266Y TKTA1266Y-
18	Q709	TR	KTA1266Y	KTA1266Y	-	KTA1266Y
19	R729	R C-FILM	1/6W 33K RD-AZ333J-	1/6W 33K RD-AZ333J-	-	1/6W 33K RD-AZ333J-
20	R730	R C-FILM	1/6W 33K	1/6W 33K	-	1/6W 33K
21	R732	R C-FILM	1/6W 4.7K RD-AZ472J-	1/6W 4.7K RD-AZ472J-	-	1/6W 4.7K RD-AZ472J-
22	R733	R C-FILM	1/6W 4.7K	1/6W 4.7K	-	1/6W 4.7K
23	R736	R C-FILM	1/6W 4.7K	1/6W 4.7K	-	1/6W 4.7K
24	R737	R C-FILM	1/6W 4.7K	1/6W 4.7K	-	1/6W 4.7K
25	C105	C ELECTRO	50V 4.7u CEXF1H479V	50V 4.7u CEXF1H479V	-	50V 4.7u CEXF1H479V
26	C106	C CERA	50V 0.01u CCZF1E103Z	50V 0.01u CCZF1E103Z	-	50V 0.01u CCZF1E103Z
27	C107	C ELECTRO	50V 4.7u	50V 4.7u	-	50V 4.7u
28	C108	C CERA	50V 0.01u	50V 0.01u	-	50V 0.01u
29	U101	TUNER	3303KHC 4859714430	3303KHC 4859714430	DT2-IV17D 4859716130	3303KHC 4859714430
30	F801C	INSU COVER	-	-	PVC T1.0 94V-0 4857621200	-

NO	LOC	NAME	TF	TK	TU	TA
31	Z101	CERA. FILTER	-	-	-	MKT40MA100P 5PMKT40MA-
32	Z102	CERA. FILTER	-	-	-	MKT40MA100P
33	IL01	IC AM DEMOD.	-	-	-	STV8225 1STV8225—
34	SL01	SAW FILTER	-	-	-	L9461M 5PL9461M—
35	QL01	TR	-	-	-	KTC3198Y
36	QL02	TR	-	-	-	KTC3198Y
37	QL03	TR	-	-	-	KTC3197 TKTC3197—
38	Q702	TR	-	-	-	KTC3198Y
39	DL01	DIODE	-	-	-	1S2186 D1S2186—
40	DL02	DIODE	-	-	-	1S2186
41	RL01	R C-FILM	-	-	-	1/6W 22K RD-AZ223J-
42	RL02	R C-FILM	-	-	-	1/6W 100 RD-AZ101J-
43	RL03	R C-FILM	-	-	-	1/6W 2.2K RD-AZ222J-
44	RL04	R C-FILM	-	-	-	1/6W 10K RD-AZ103J-
45	RL05	R C-FILM	-	-	-	1/6W 10K
46	RL06	R C-FILM	-	-	-	1/6W 68K RD-AZ683J-
47	RL07	R C-FILM	-	-	-	1/4W 120 RD-4Z121J-
48	RL08	R C-FILM	-	-	-	1/6W 15K RD-AZ153J-
49	RL09	R C-FILM	-	-	-	1/6W 750 RD-AZ751J-
50	RL10	R C-FILM	-	-	-	1/6W 2.2K
51	R101	R C-FILM	-	-	-	1/6W 47 RD-AZ470J-
52	R712	R C-FILM	-	-	-	1/6W 10K
53	R713	R C-FILM	-	-	-	1/6W 4.7K
54	R752	R C-FILM	-	-	-	1/6W 10K
55	CL07	C CERA	-	-	-	50V 82 CCZB1H820<
56	CL01	C CERA	-	-	-	50V CH 22 CZCH1H220J
57	CL02	C ELECTRO	-	-	-	50V 47u CEXF1H470✓
58	CL03	C CERA	-	-	-	50V 0.01u CCZF1E103Z
59	CLO4	C ELECTRO	-	-	-	50V 4.7u CEXF1H479✓
60	CL05	C CERA	-	-	-	50V CH 22 CZCH1H220J
61	CL06	C ELECTRO	-	-	-	50V 4.7u
62	C707	C ELECTRO	-	-	-	50V 10u CEXF1H100✓

NO	LOC	NAME	TF	TK	TU	TA
63	C728	C CERA	-	-	-	50V CH 16 CZCH1H160J
64	JP08	WIRE COPPER	WIRE COPPER	WIRE COPPER	WIRE COPPER	-
65	JP09	WIRE COPPER	WIRE COPPER	WIRE COPPER	WIRE COPPER	-
66	I501	TDA8374A	TDA8374A 1TDA8374A-	TDA8374A 1TDA8374A-	TDA8374A 1TDA8374A-	TDA8374 1TDA8374—
67	C104	C ELECTRO	50V 4.7u CEXF1H479V	50V 4.7u CEXF1H479V	50V 4.7u CEXF1H479V	50V 33u CEXF1H330V
68	R612	R C-FILM	1/6W 6.2K RD-AZ622J-	1/6W 6.2K RD-AZ622J-	1/6W 6.2K RD-AZ622J-	1/6W 4.7K RD-AZ472J-
69	R613	R C-FILM	1/6W 6.2K	1/6W 6.2K	1/6W 6.2K	1/6W 4.7K
70	R614	R C-FILM	1/6W 15K RD-AZ153J-	1/6W 15K RD-AZ153J-	1/6W 15K RD-AZ153J-	1/6W 6.2K RD-AZ622J-
71	R639	R C-FILM	1/6W 1.8K RD-AZ182J-	1/6W 1.8K RD-AZ182J-	1/6W 1.8K RD-AZ182J-	1/6W 2.2K RD-AZ222J-

Difference of parts for Option

-Teletext option

Model No.	Option	I701	JP01	X701	C701
TF,TU,TA	TTX - West Europe	DW5255M*	open	18MHz	22uF
	Non - TTX	DW370M*	open	20MHz	100µF
TK	TTX - East Europe	DW5255M*	short	18MHz	22uF
	TTX - Russia	DW5255RM*	don't care	18MHz	22uF
	Non - TTX	DW370M*	don't care	20MHz	100µF

-Antenna option

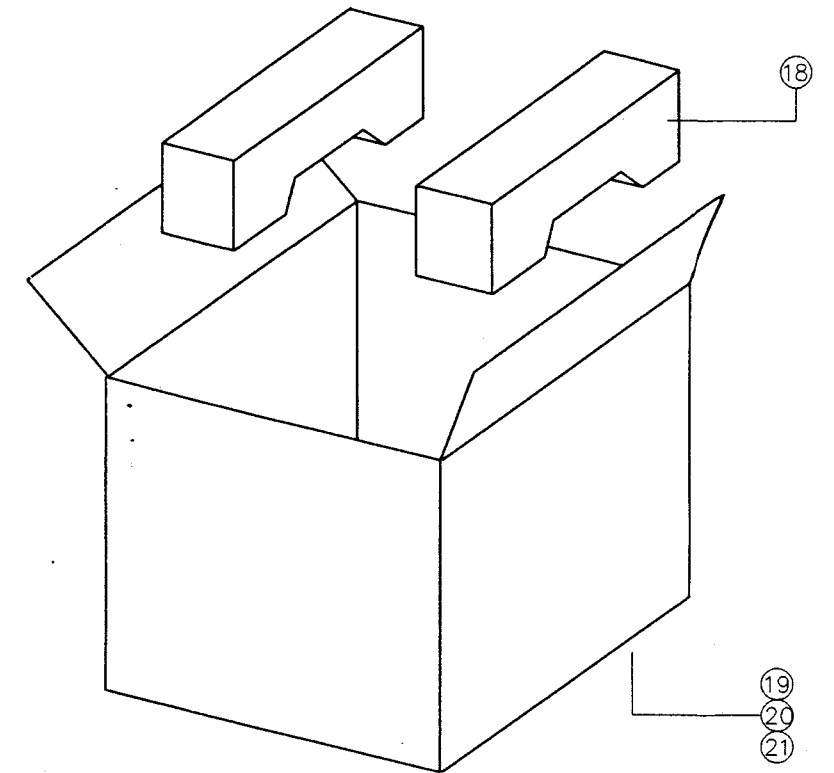
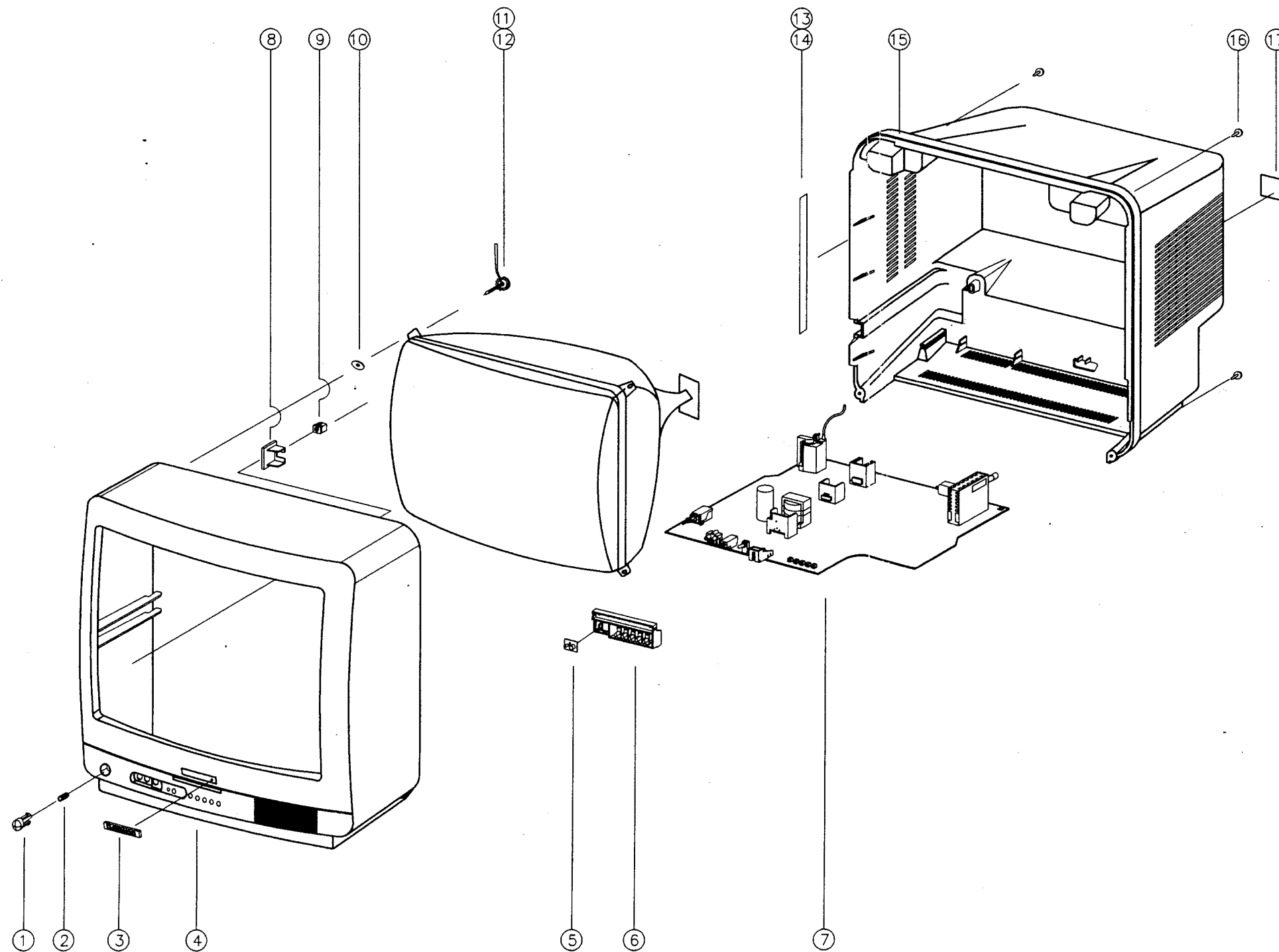
Model No.	Antenna Type No.
TF,TK,TA	PH-RM-003
TU	PH-RM-006

Difference of electrical parts for Cabinet

LOG	NAME	A5	O SERIES	T SERIES (SPEAKER)
SP01	SPEAKER	SP-77A04 4858312410	3W 16 OHM F20 35C03-3 4858306810	3W 8 OHM MSF-2D30SB02U 4858305220
SP02	SPEAKER	—	—	3W 8 OHM MSF-2D30SB02U 4858305220
PA601	CONN AS	YH025-03+YST025 +ULW=200 4850703S03	YH025-03+YST025 +ULW=200 4850703S03	YH025-03+YST025 +ULW=300 4850703S04
PA602	CONN AS	—	—	YH025-03+YST025 +ULW=700 4850703S07
I601A	HEAT SINK	—	—	A1050P-H24 T2 4857025401
I601B	SCREW	—	—	TT2 RND 3X8 MFZN 7174300811
LP01	COIL BEAD	—	—	MD-5 5MC0000100
LP02	COIL BEAD	MD-5 5MC0000100	MD-5 5MC0000100	—
R608	R C-FILM	1/6W 1K RD-AZ102J-	1/6W 1K RD-AZ102J-	1/6W 1.5K RD-AZ152J-
JP06	WIRE COPPER	AWG22 1/0.65 TIN COATING 85801065GY	AWG22 1/0.65 TIN COATING 85801065GY	—
P602	CONN WAFER	—	—	YW025-03

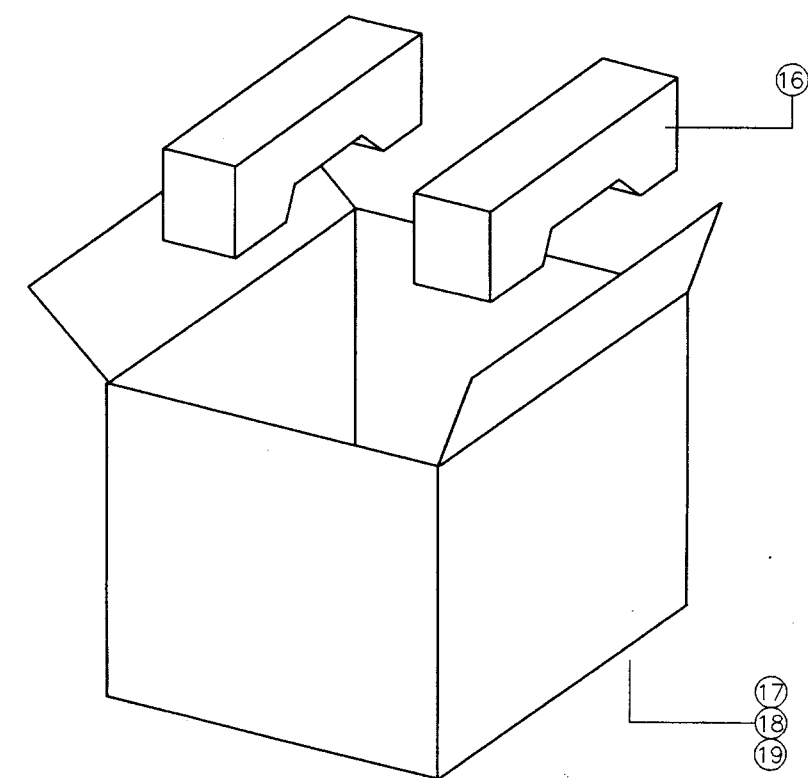
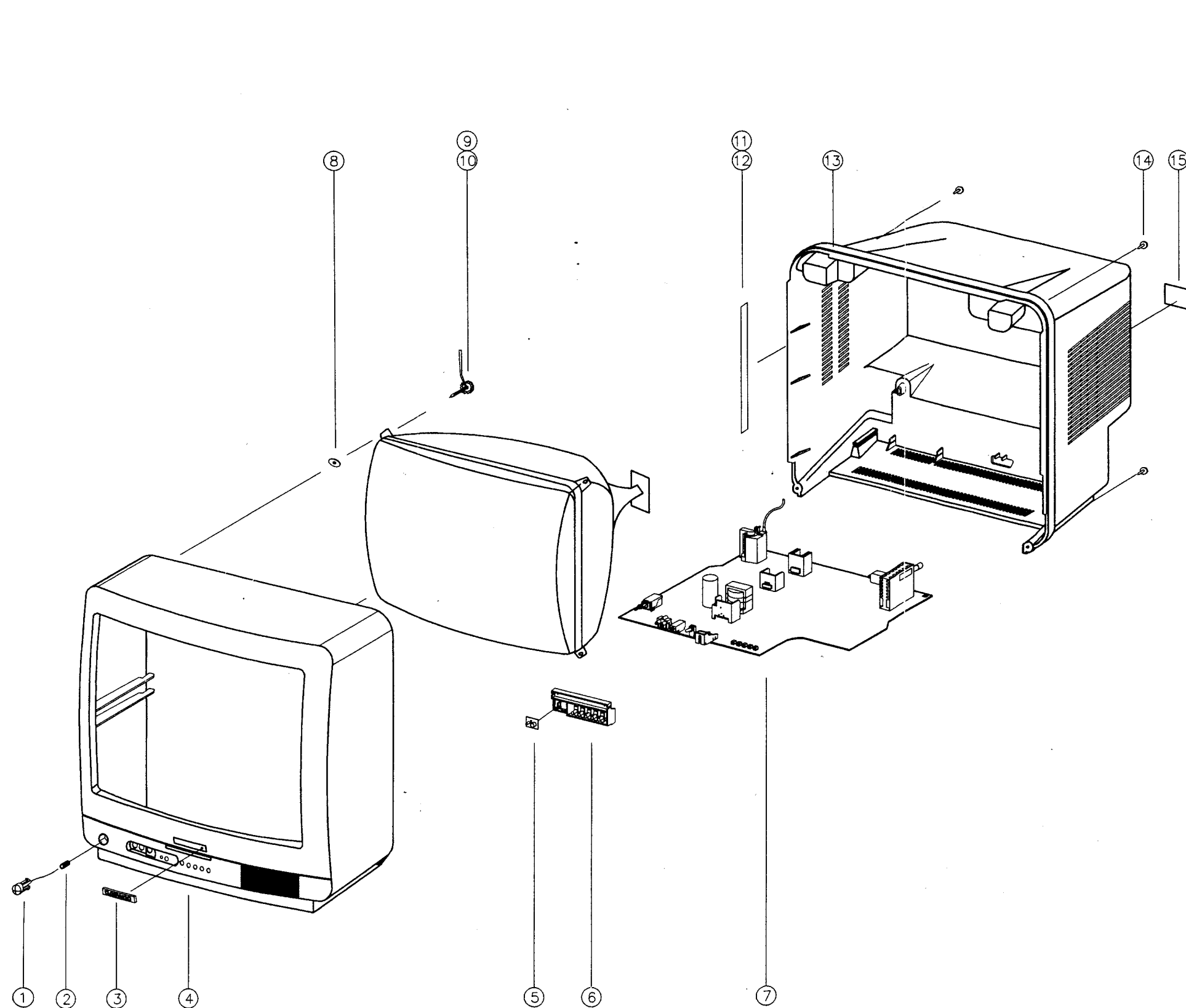
■ Mechanical Exploded View and Parts List

■ 14Q1



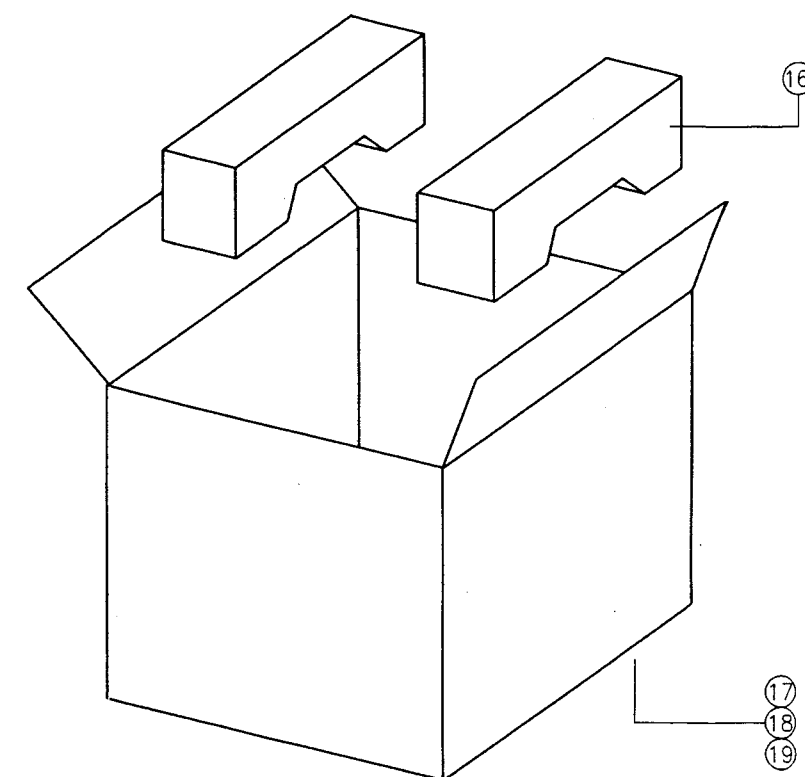
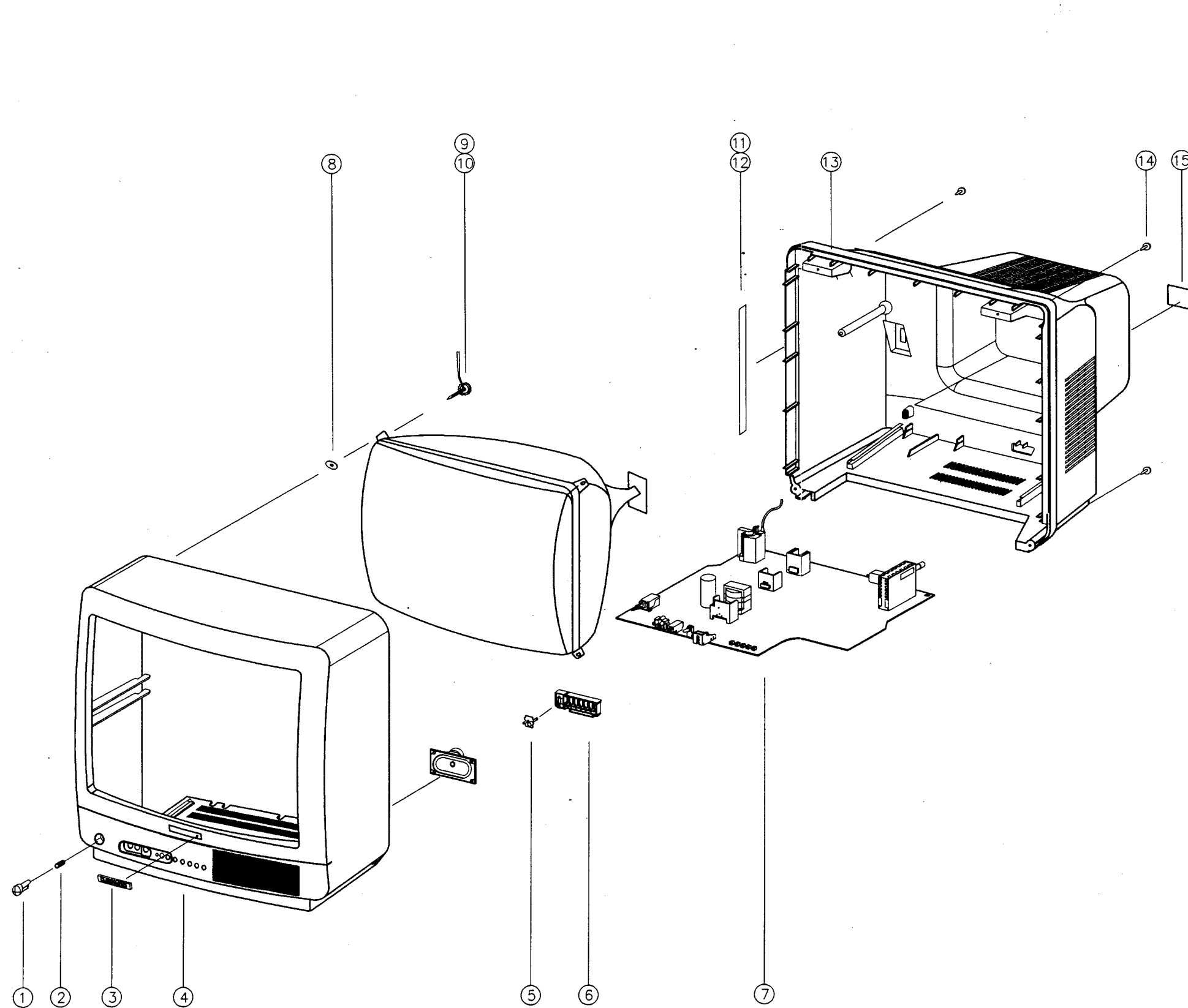
21	6520010100	STAPLE PIN	1	18M/M JDO	
20	4858211400	POLY BAG	1	P.E. FILM T0.03X600X550	
19	4858038700	BOX CARTON	1	SW-2	
18	4858179200	PAD	1	EPS	
17	4855415800	SPEC PLATE	1	150 ART P/E FILM	
16	7122401412	SCREW TAPPING	1	T2S TRS 4X14 MFZN BK	
15	4852147201	COVER BACK	1	HIPS BK	
14	4857817640	CLOTH BLACK	1	FELT T0.7 L=100	
13	4857817611	CLOTH BLACK	1	FELT T0.7 L=200	
12	4856013300	SCREW CRT FIXING AS.	2	L=70mm	
11	4856013301	SCREW CRT FIXING AS.	2	L=140mm	
10	4852148500	WASHER RUBBER	4	CR T2.0	
9	97P231601	HODER AC CORD	1	NYLON66(VCR-32DAV(JB))	
8	4853533200	HOLDER BRKT	1	HIPS BK	
7		MAIN PCB	1	CP-375	
6	4854933000	BUTTON	1	ABS BK	
5	4855530400	DECO SENSOR	1	PMMA	
4	4852060501	MASK FRONT	1	HIPS BK	
3	4855613600	MARK BRAND	1	A1050P-H24 D.4	
2	4856717900	SPRING	1	SWPA	
1	4854848201	POWER BUTTON	1	ABS BK	

20Q1



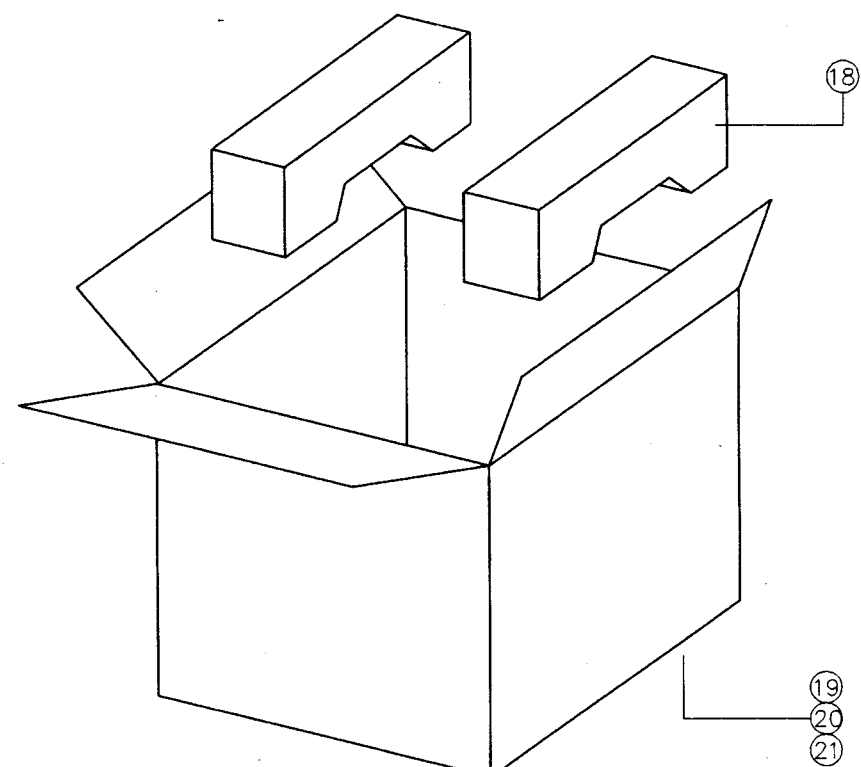
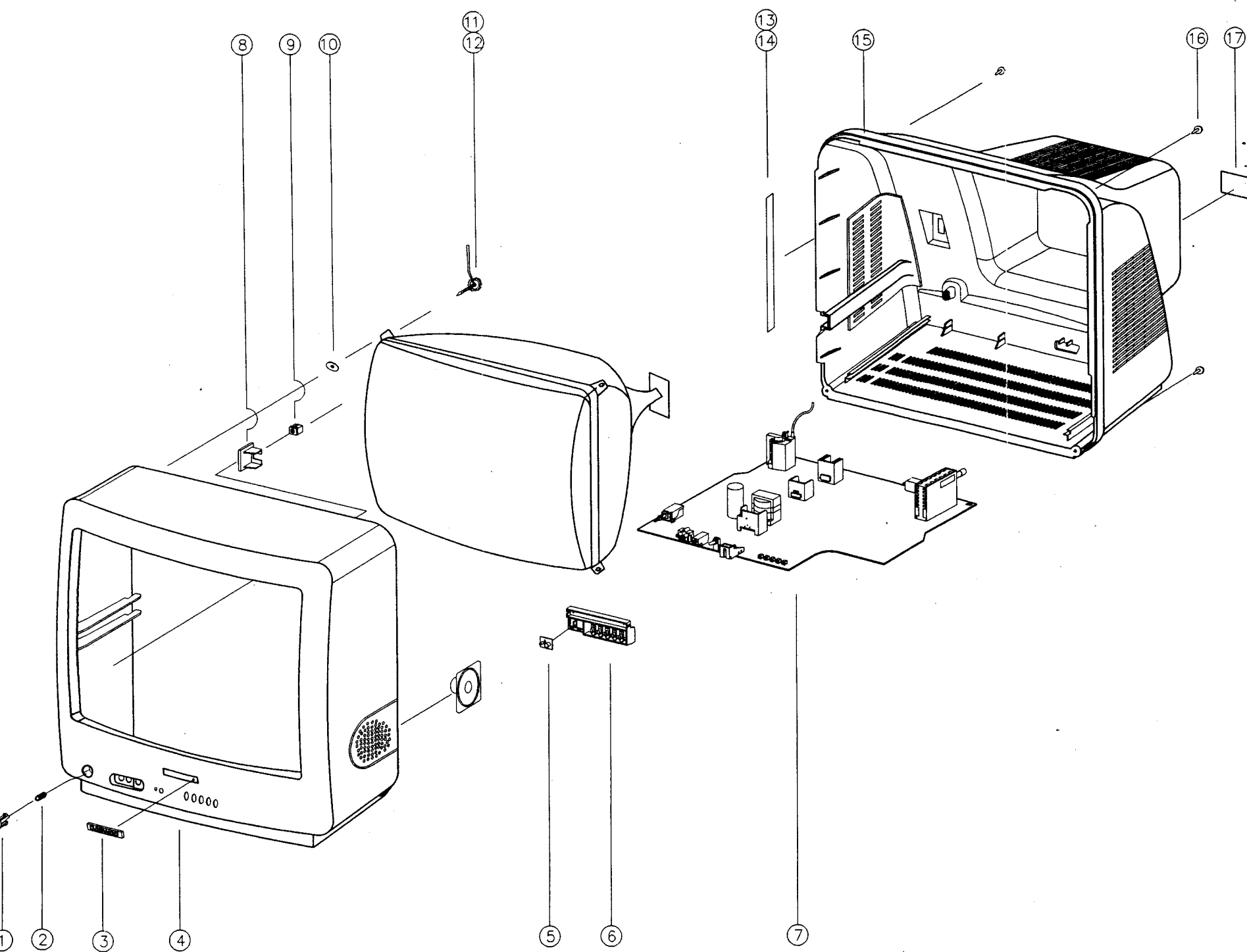
19	6520010100	STAPLE PIN	1	18M/M JDO	
18	4858211400	POLY BAG	1	P.E. FILM T0.03X600X550	
17	4858045200	BOX CARTON	1	SW-2	
16	4858179300	PAD	1	EPS	
15	4855415800	SPEC PLATE	1	150 ART P/E FILM	
14	7122401412	SCREW TAPPING	1	T2S TRS 4X14 MFZN BK	
13	4852147301	COVER BACK	1	HIPS BK	
12	4857817640	CLOTH BLACK	1	FELT T0.7 L=100	
11	4857817611	CLOTH BLACK	1	FELT T0.7 L=200	
10	4856013300	SCREW CRT FIXING AS.	2	L=70mm	
9	4856013301	SCREW CRT FIXING AS.	2	L=140mm	
8	4852148500	WASHER RUBBER	4	CR T2.0	
7		MAIN PCB	1	CP-375	
6	4854933000	BUTTON	1	ABS BK	
5	4855530400	DECO SENSOR	1	PMMA	
4	4852060700	MASK FRONT	1	HIPS BK	
3	4855613600	MARK BRAND	1	A1050P-H24 T0.4	
2	4856717900	SPRING	1	SWPA	
1	4854848201	POWER BUTTON	1	ABS BK	

21Q1



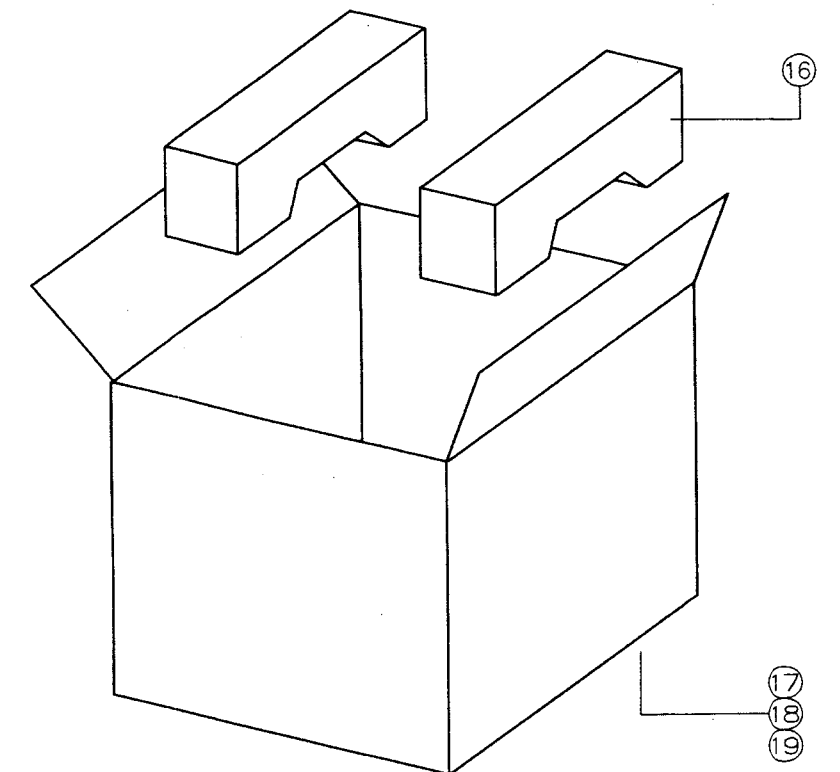
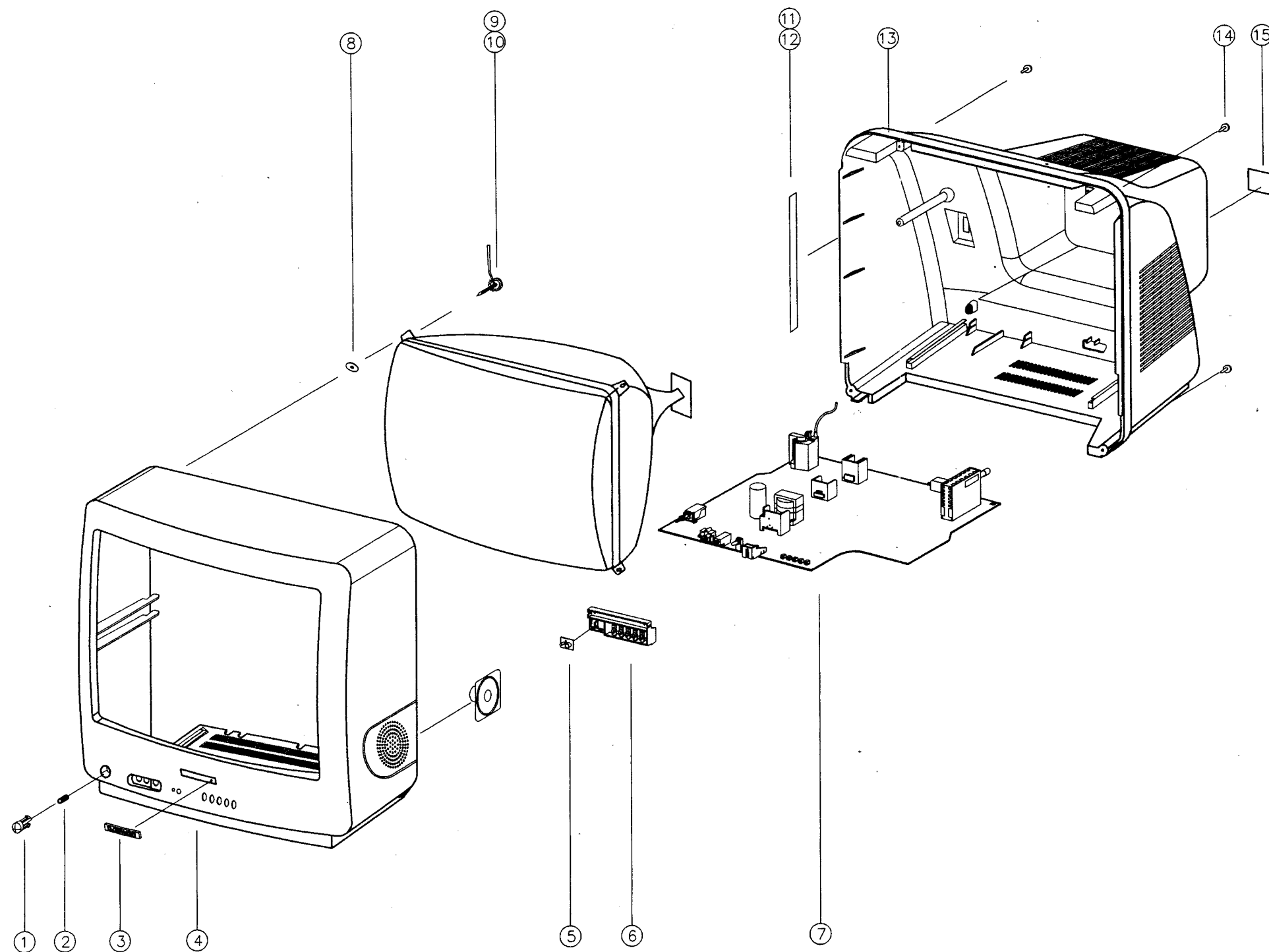
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19	6520010100	STAPLE PIN	12	18M/M JDO		
18	4858211400	POLY BAG	1	P.E. FILM T0.03X600X550		
17	4858050600	BOX CARTON	1	SW-2		
16	4858179700	PAD	1	EPS		
15	4855415800	SPEC PLATE	1	150 ART P/E FILM		
14	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK		
13	4852147701	COVER BACK	1	HIPS BK		
12	4857817640	CLOTH BLACK	1	FELT T0.7 L=100		
11	4857817611	CLOTH BLACK	2	FELT T0.7 L=200		
10	4856013300	SCREW CRT FIXING AS.	2	L=70mm		
9	4856013302	SCREW CRT FIXING AS.	2	L=190mm		
8	4852148500	WASHER RUBBER	4	CR T2.0		
7		MAIN PCB	1	CP-375		
6	4854933201	BUTTON	1	ABS BK		
5	4855530800	DECO SENSOR	1	PMMA		
4	4852061101	MASK FRONT	1	HIPS BK		
3	48556159BW	MARK BRAND	1	A1050P-H24 T0.4		
2	4856716000	SPRING	1	SWPA		
1	4854848601	POWER BUTTON	1	ABS BK		

14A5



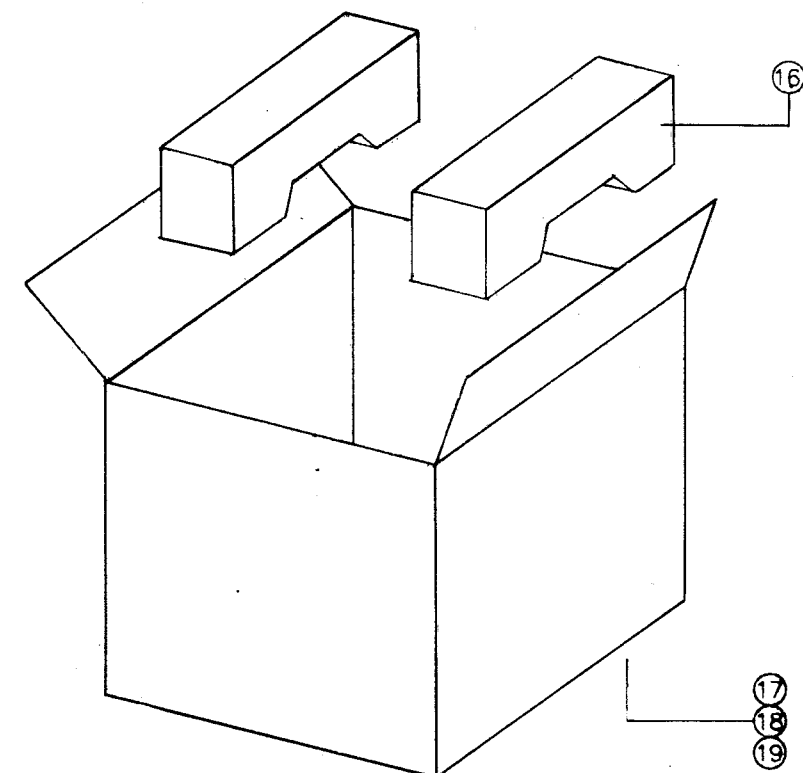
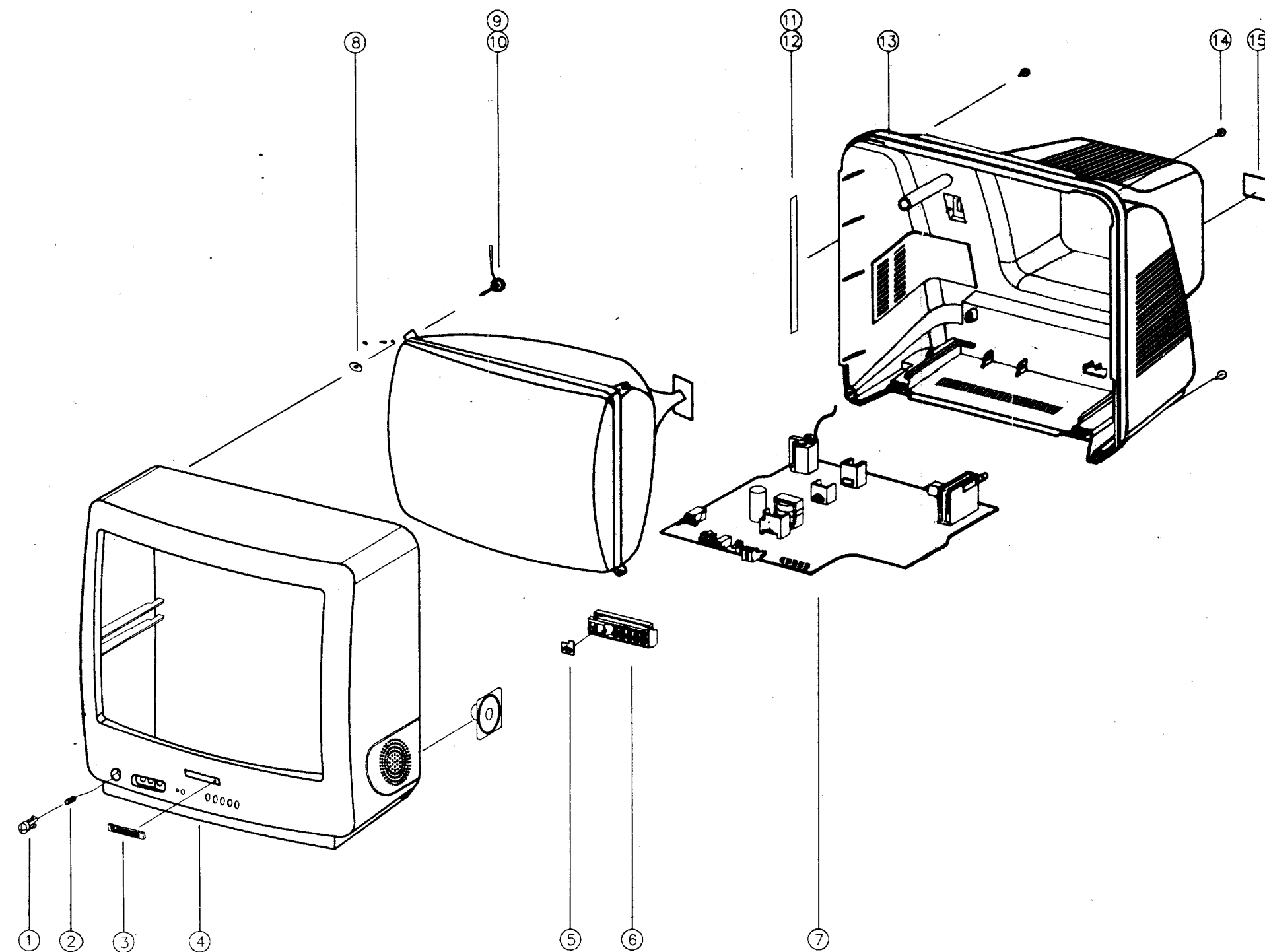
21	6520010100	STAPLE PIN	1	18M/M JDO	
20	4858211400	POLY BAG	1	P.E. FILM T0.03X600X550	
19	4858034800	BOX CARTON	1	SW-2	
18	4858174900	PAD	1	EPS	
17	4855415800	SPEC PLATE	1	150 ART P/E FILM	
16	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK	
15	4852142401	COVER BACK	1	HIPS BK	
14	4857817640	CLOTH BLACK	2	FELT T0.7 L=100	
13	4857817611	CLOTH BLACK	1	FELT T0.7 L=200	
12	4856013300	SCREW CRT FIXING AS	2	L=70mm	
11	4856013301	SCREW CRT FIXING AS	2	L=140mm	
10	4852148500	WASHER RUBBER	4	CR T2.0	
9	97P231601	HODER AC CORD	1	NYLON66(VCR-32DAV(JB))	
8	4853533200	HOLDER BRKT	1	HIPS BK	
7		MAIN PCB	1	CP-375	
6	4854928401	BUTTON	1	ABS BK	
5	4855526001	DECO SENSOR	1	PMMA	
4	4852056001	MASK FRONT	1	HIPS BK	
3	4855613600	MARK BRAND	1	A1050P-H24 T0.4	
2	4856717900	SPRING	1	SWPA	
1	4854844601	POWER BUTTON	1	ABS BK	

20A5

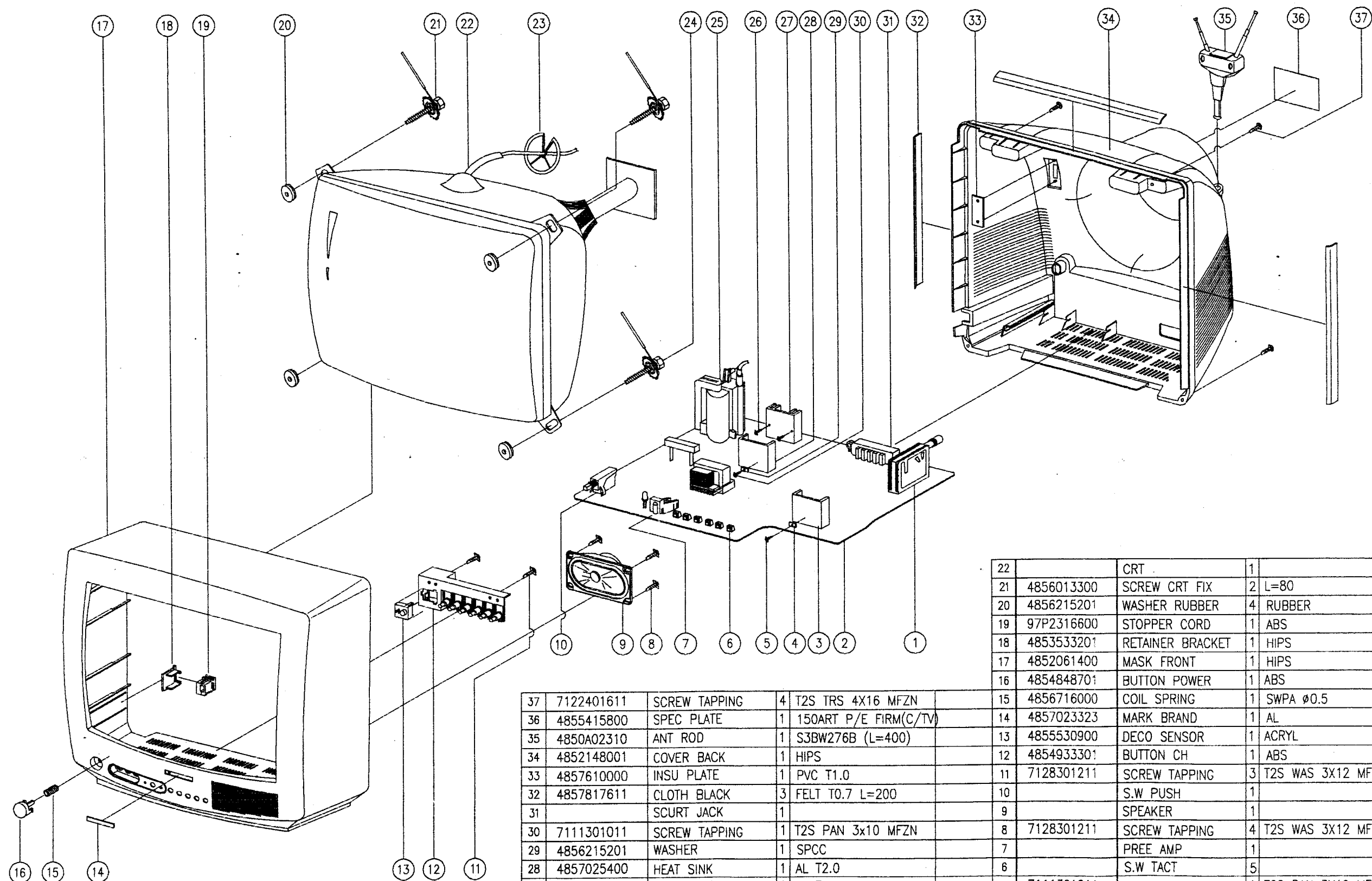


21							
20							
19	6520010100	STAPLE PIN	12	18M/M JDO			
18	4858211400	POLY BAG	1	P.E. FILM T0.03X600X550			
17	4858033700	BOX CARTON	1	SW-2			
16	4858175000	PAD	1	EPS			
15	4855415800	SPEC PLATE	1	150 ART P/E FILM			
14	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK			
13	4852142501	COVER BACK	1	HIPS BK			
12	4857817640	CLOTH BLACK	1	FELT T0.7 L=100			
11	4857817611	CLOTH BLACK	2	FELT T0.7 L=200			
10	4856013300	SCREW CRT FIXING AS.	2	L=70mm			
9	4856013302	SCREW CRT FIXING AS.	2	L=190mm			
8	4852148500	WASHER RUBBER	4	CR T2.0			
7		MAIN PCB	1	CP-375			
6	4854928501	BUTTON	1	ABS BK			
5	4855526701	DECO SENSOR	1	PMMA			
4	4852056101	MASK FRONT	1	HIPS BK			
3	4855615900	MARK BRAND	1	A1050P-H24 T0.4			
2	4856715600	SPRING	1	SWPA			
1	4854844701	POWER BUTTON	1	ABS BK			

21A5



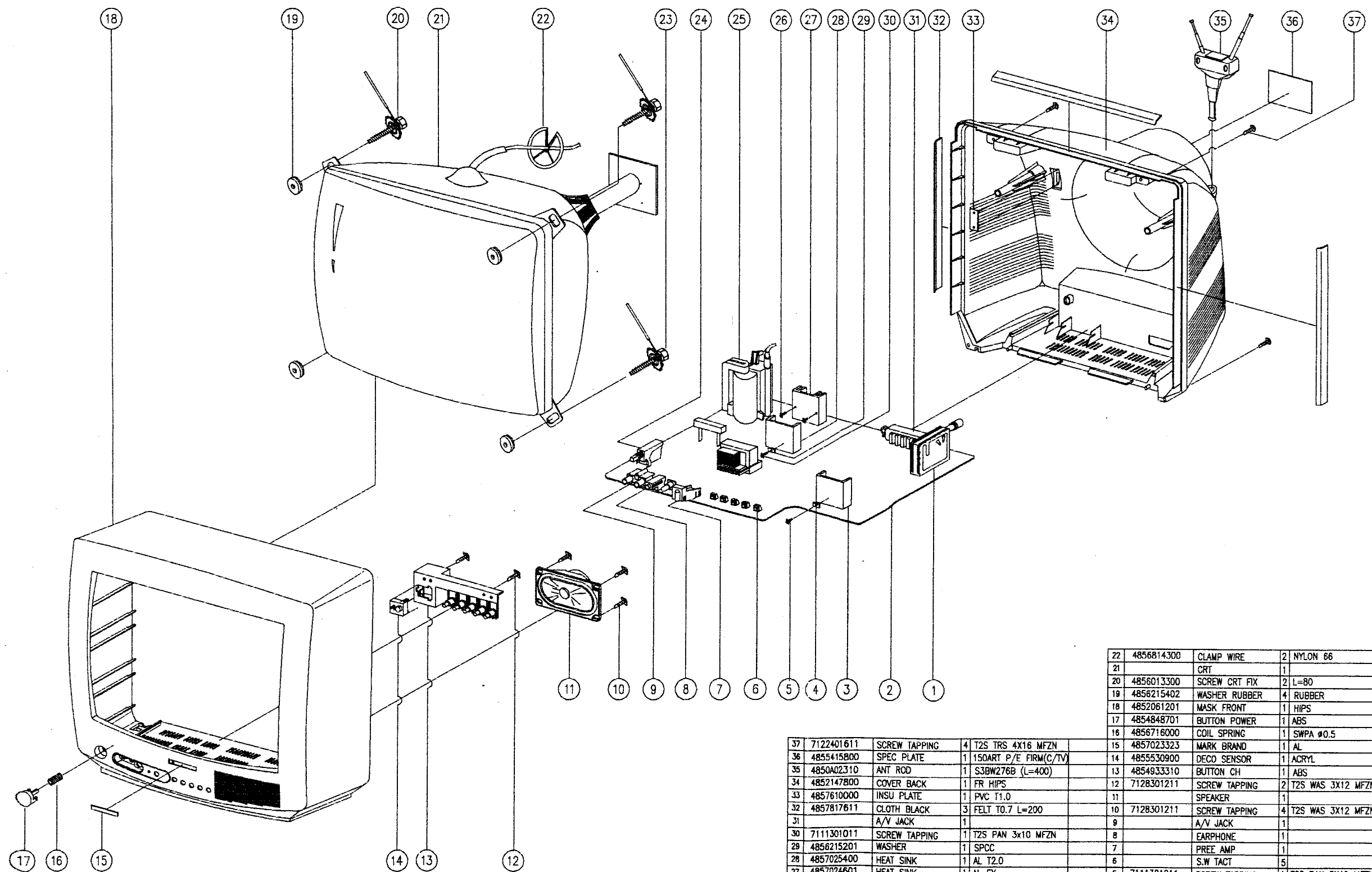
19	6520010100	STAPLE PIN	1	18M/M JDO	
18	4858211400	POLY BAG	1	P.E. FILM T0.03X600X550	
17	4858029800	BOX CARTON	1	DW-2	
16	4858175100	PAD	1	EPS	
15	4855415800	SPEC PLATE	1	150 ART P/E FILM	
14	7122401412	SCREW TAPPING	1	T2S TRS 4X14 MFZN BK	
13	4852142601	COVER BACK	1	HIPS BK	
12	4857817604	CLOTH BLACK	1	FELT T0.7 L=100	
11	4857817611	CLOTH BLACK	2	FELT T0.7 L=200	
10	4856013300	SCREW CRT FIXING AS.	2	L=70mm	
9	4856013303	SCREW CRT FIXING AS.	2	L=240mm	
8	4852148500	WASHER RUBBER	4	CR T2.0	
7		MAIN PCB	1	CP-375	
6	4854928601	BUTTON	1	ABS BK	
5	4855526801	DECO SENSOR	1	PMMA	
4	4852056201	MASK FRONT	1	HIPS BK	
3	4855615900	MARK BRAND	1	A1050P-H24 T0.4	
2	4856717900	SPRING	1	SWPA	
1	4854844801	POWER BUTTON	1	ABS BK	



37	7122401611	SCREW TAPPING	4	T2S TRS 4X16 MFZN
36	4855415800	SPEC PLATE	1	150ART P/E FIRM(C/TV)
35	4850A02310	ANT ROD	1	S3BW276B (L=400)
34	4852148001	COVER BACK	1	HIPS
33	4857610000	INSU PLATE	1	PVC T1.0
32	4857817611	CLOTH BLACK	3	FELT T0.7 L=200
31		SCURT JACK	1	
30	7111301011	SCREW TAPPING	1	T2S PAN 3x10 MFZN
29	4856215201	WASHER	1	SPCC
28	4857025400	HEAT SINK	1	AL T2.0
27	4857024601	HEAT SINK	1	AL EX
26	7111301011	SCREW TAPPING	2	T2S PAN 3x10 MFZN
25		FBT	1	
24	4856013301	SCREW CRT FIX	2	L=140
23	4856814300	CLAMP WIRE	2	NYLON 66

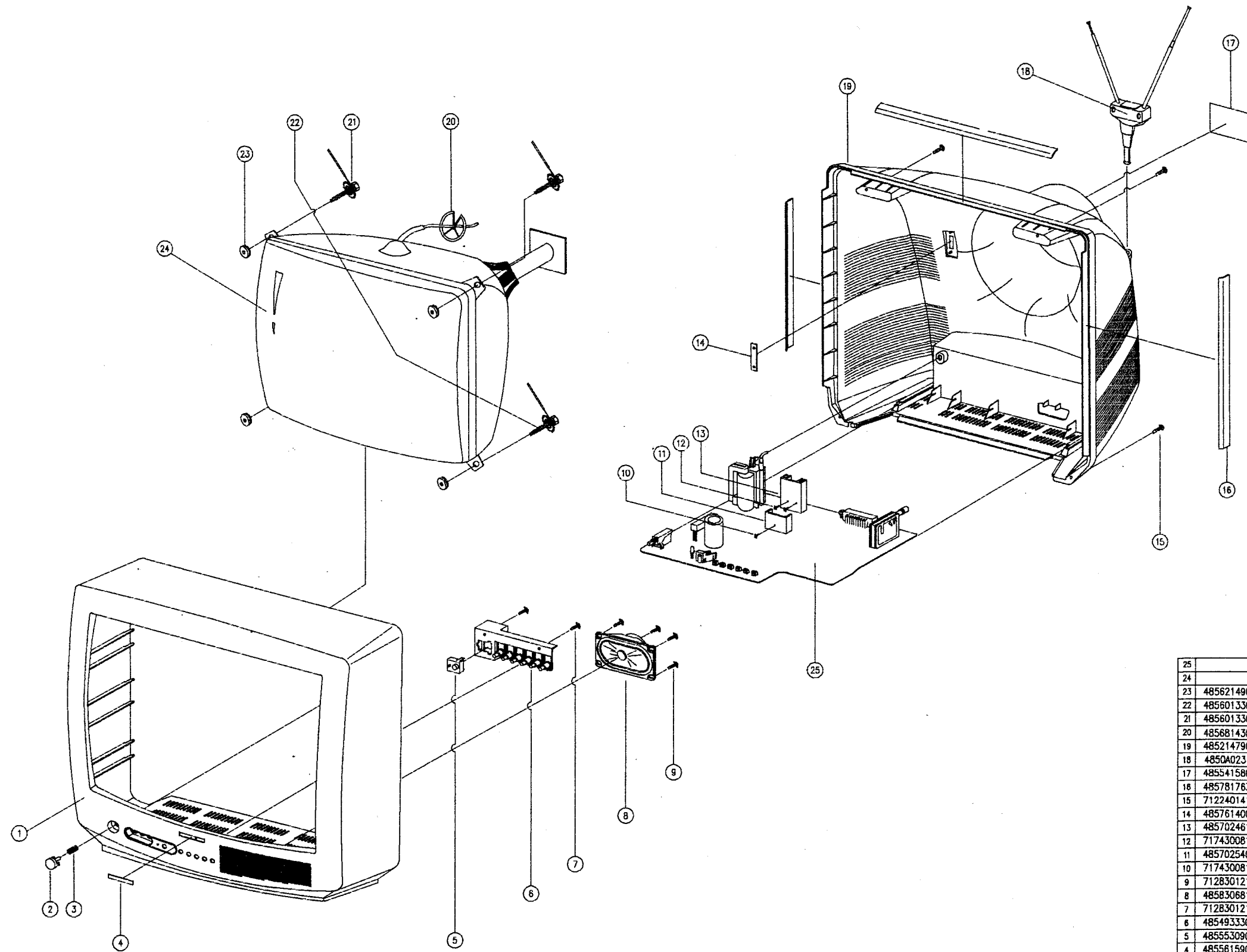
22		CRT	1	
21	4856013300	SCREW CRT FIX	2	L=80
20	4856215201	WASHER RUBBER	4	RUBBER
19	97P2316600	STOPPER CORD	1	ABS
18	4853533201	RETAINER BRACKET	1	HIPS
17	4852061400	MASK FRONT	1	HIPS
16	4854848701	BUTTON POWER	1	ABS
15	4856716000	COIL SPRING	1	SWPA Ø0.5
14	4857023323	MARK BRAND	1	AL
13	4855530900	DECO SENSOR	1	ACRYL
12	4854933301	BUTTON CH	1	ABS
11	7128301211	SCREW TAPPING	3	T2S WAS 3X12 MFZN
10		S.W PUSH	1	
9		SPEAKER	1	
8	7128301211	SCREW TAPPING	4	T2S WAS 3X12 MFZN
7		PREE AMP	1	
6		S.W TACT	5	
5	7111301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN
4	4856215201	WASHER	1	SPCC T1.5
3	4857025401	HEAT SINK	1	A1050P-H24 T2.0
2		PCB MAIN	1	
1		TUNER	1	

20Q2



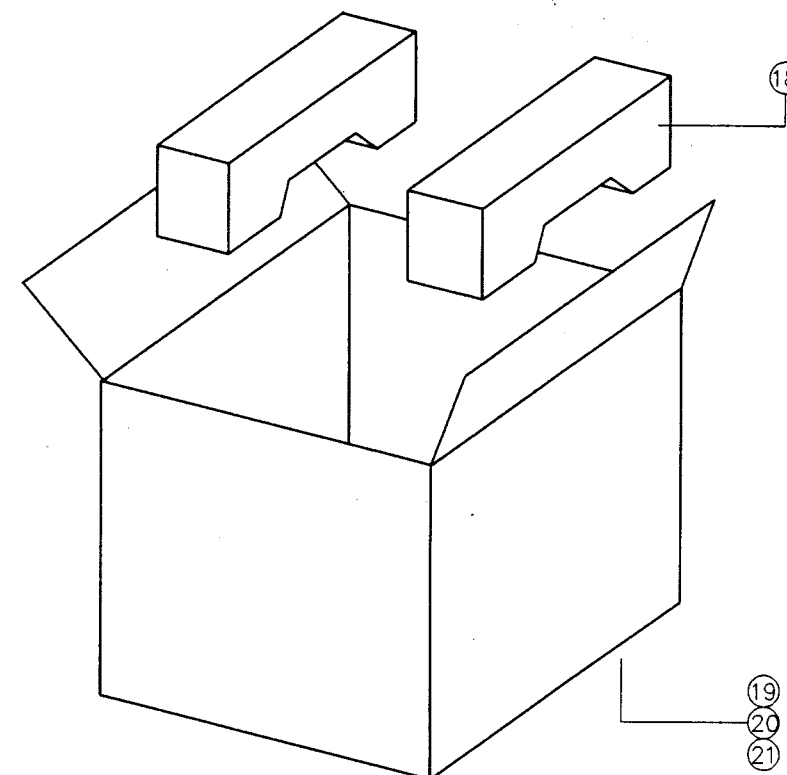
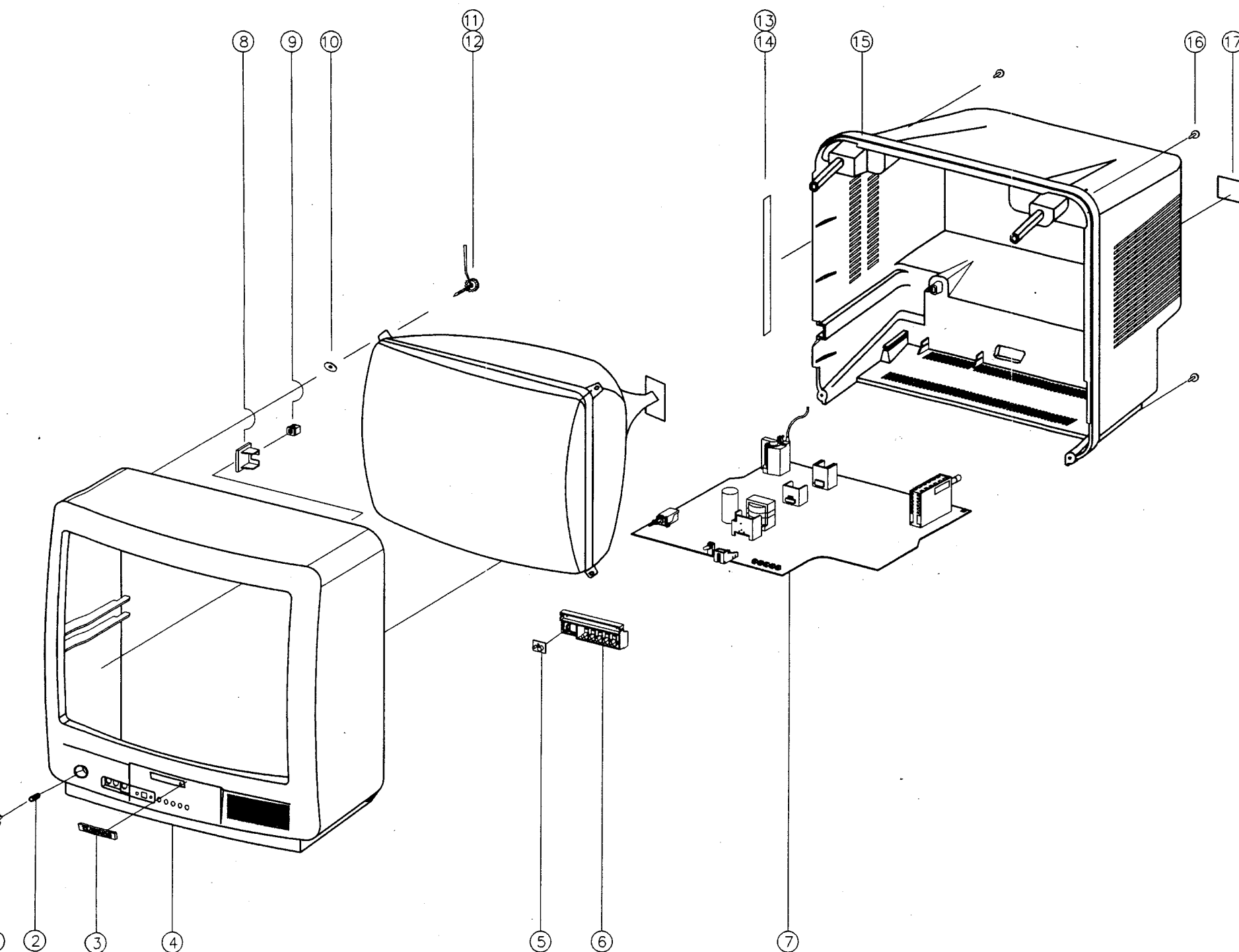
22	4856814300	CLAMP WIRE	2	NYLON 66	
21		CRT	1		
20	4856013300	SCREW CRT FIX	2	L=80	
19	4856215402	WASHER RUBBER	4	RUBBER	
18	4852061201	MASK FRONT	1	HIPS	
17	4854848701	BUTTON POWER	1	ABS	
16	4856716000	COIL SPRING	1	SWPA #0.5	
15	4857023323	MARK BRAND	1	AL	
14	4855530900	DECO SENSOR	1	ACRYL	
13	4854933310	BUTTON CH	1	ABS	
12	7128301211	SCREW TAPPING	2	T2S WAS 3X12 MFZN	
11		SPEAKER	1		
10	7128301211	SCREW TAPPING	4	T2S WAS 3X12 MFZN	
9		A/V JACK	1		
8		EARPHONE	1		
7		PREE AMP	1		
6		S.W TACT	5		
5	7111301011	SCREW TAPPING	1	T2S PAN 3X10 MFZN	
4	4856215201	WASHER	1	SPCC T1.5	
3	4857025401	HEAT SINK	1	A1050P-H24 T2.0	
2		PCB MAIN	1		
1	4856013302	SCREW CRT FIX	2	L=190	

21Q2



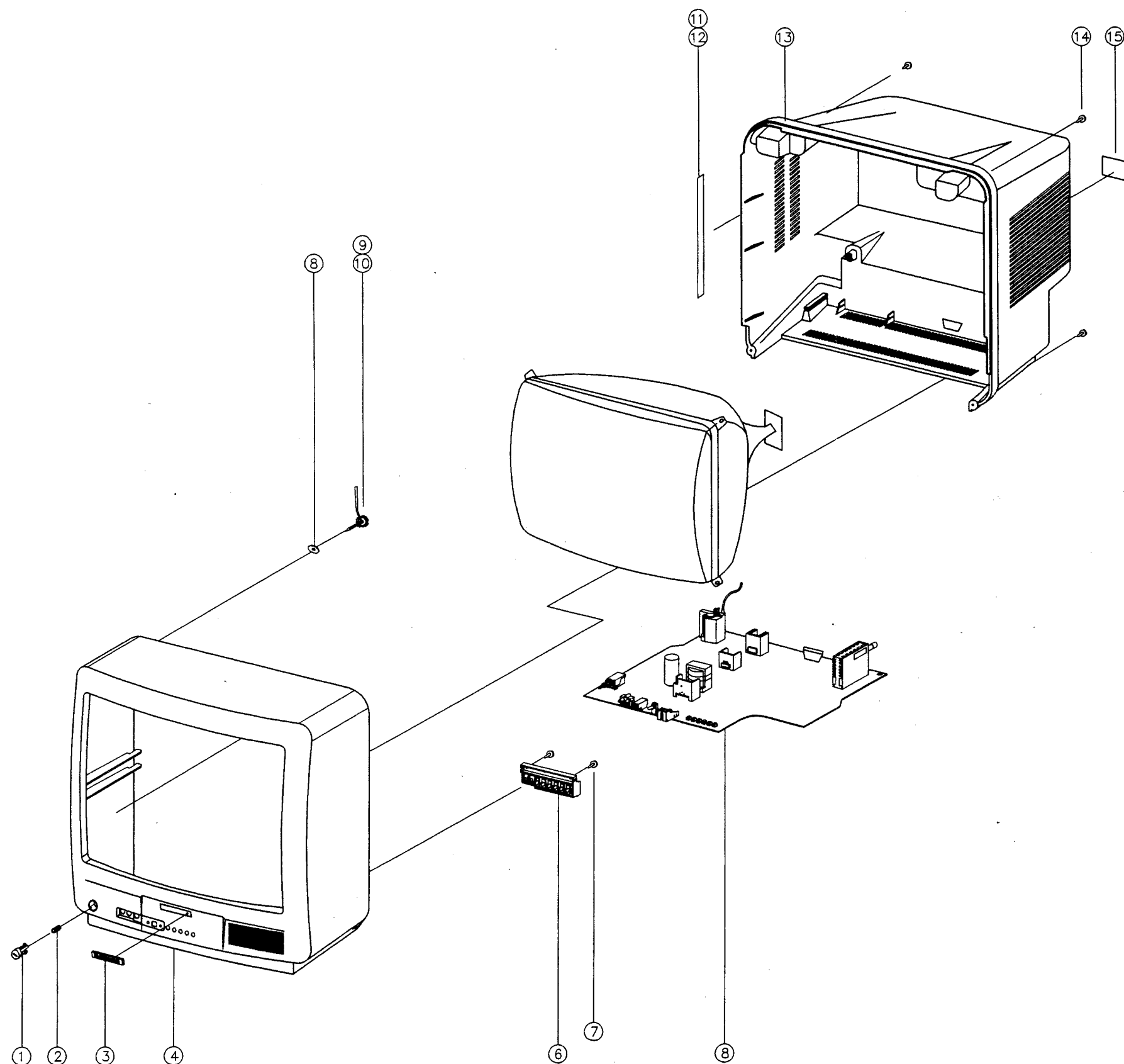
25		PCB ASS'Y	1	
24		CRT	1	
23	4856214902	WASHER RUBBER	4	CR T2
22	4856013302	SCREW CRT FIX AS	2	L=190 BK
21	4856013300	SCREW CRT FIX AS	2	L=80 BK
20	4856814300	CLAMP WIRE	2	NYLON66
19	4852147900	COVER BACK	1	FR HIPS BK
18	4850A02310	ANT ROD	1	S3BW276B (L=400MM)
17	4855415800	SPEC PLATE	1	150 ART P/E FIRM(C/TV)
16	4857817630	CLOTH BLACK	2	FELT T0.7 L=400
15	7122401411	SCREW TAPPING	4	T2S TRS 4X14 MFZN
14	4857614000	PLATE INSU	1	PVC 0.8T BLACK
13	4857024617	HEAT SINK	1	AL EX
12	7174300811	SCREW TAPPING	2	TT2 RND 3X8 MFZN
11	4857025401	HEAT SINK	1	AL EX
10	7174300811	SCREW TAPPING	1	TT2 RND 3X8 MFZN
9	7128301211	SCREW TAPPING	4	T2S WAS 3X12 MFZN
8	4858306810	SPEAKER	1	3W 16 OHM F2035C03-3
7	7128301211	SCREW TAPPING	2	T2S WAS 3X12 MFZN
6	4854933301	BUTTON	1	ABS BK
5	4855530900	DECO SENSOR	1	PMMA
4	4855815900	MARK BRAND	1	AL T1.0
3	4856716000	SPRING	1	SWPA PIE0.5
2	4854848801	BUTTON POWER	1	ABS BK
1	4852061301	MASK FRONT	1	HIPS BK

14Q3



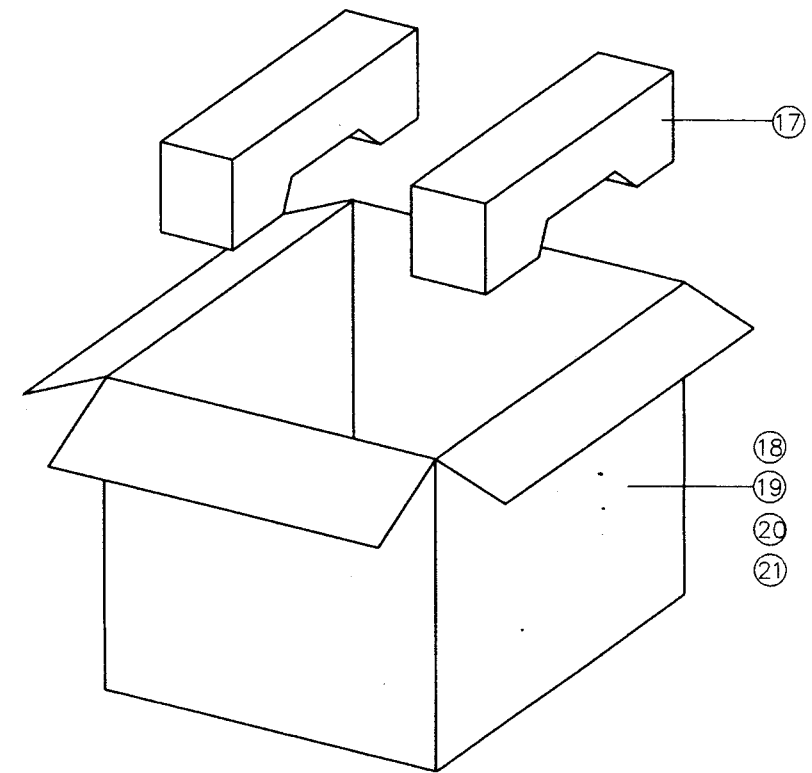
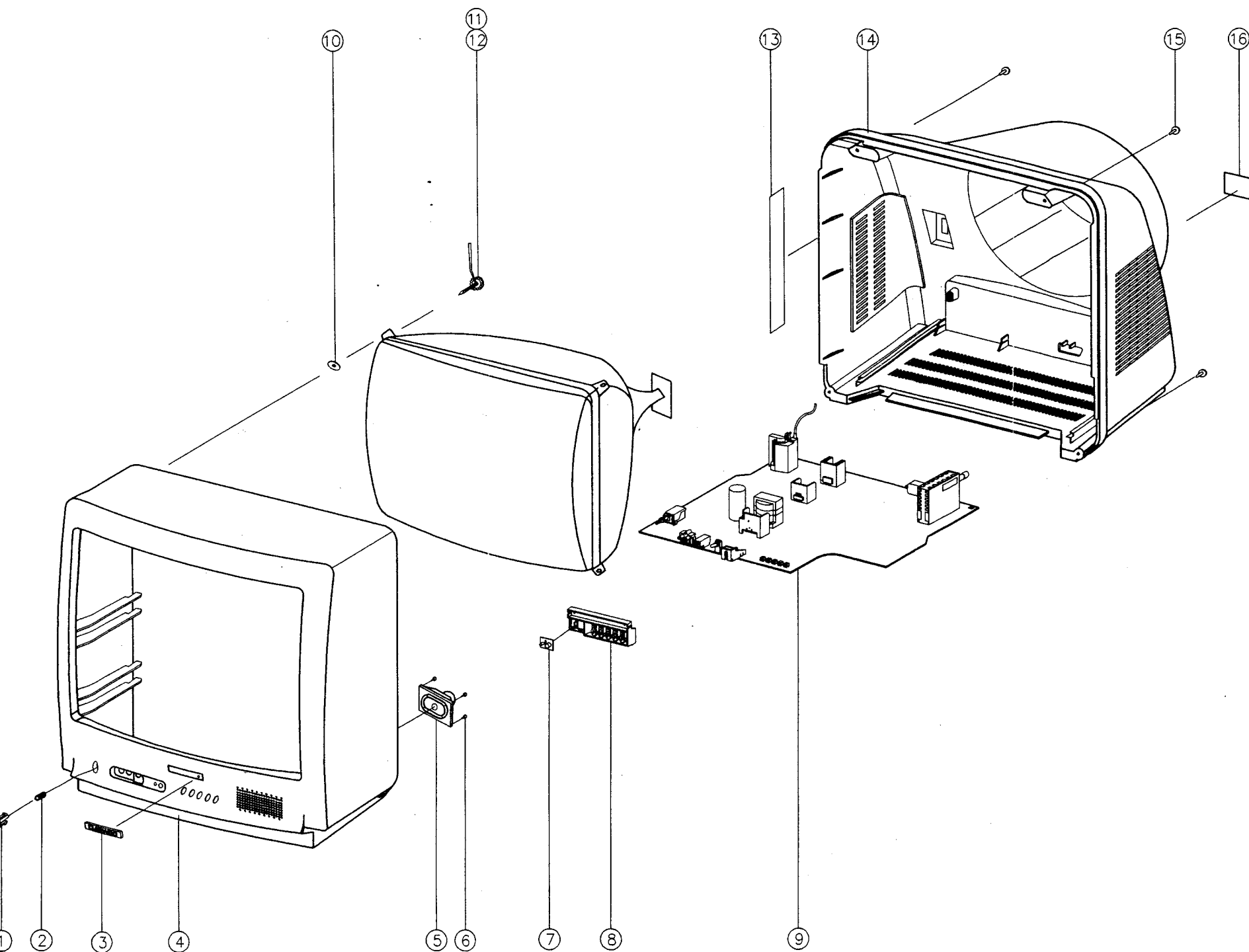
21	6520010100	STAPLE PIN	1	18M/M JDO	
20	4858211400	POLY BAG	1	P.E. FILM T0.03X600X550	
19	4858038700	BOX CARTON	1	SW-2	
18	4858179200	PAD	1	EPS	
17	4855415800	SPEC PLATE	1	150 ART P/E FILM	
16	7122401412	SCREW TAPPING	1	T2S TRS 4X14 MFZN BK	
15	4852147201	COVER BACK	1	HIPS BK	
14	4857817640	CLOTH BLACK	1	FELT T0.7 L=100	
13	4857817611	CLOTH BLACK	1	FELT T0.7 L=200	
12	4856013300	SCREW CRT FIXING AS.	2	L=70mm	
11	4856013301	SCREW CRT FIXING AS.	2	L=140mm	
10	4852148500	WASHER RUBBER	4	CR T2.0	
9	97P231601	HODER AC CORD	1	NYLON66(VCR-32DAV(JB))	
8	4853533200	HOLDER BRKT	1	HIPS BK	
7		MAIN PCB	1	CP-370	
6	4854934701	BUTTON	1	ABS BK	
5	4855532301	DECO SENSOR	1	PMMA	
4	4852063201	MASK FRONT	1	HIPS BK	
3	4855613600	MARK BRAND	1	A1050P-H24 T1.0	
2	4856717900	SPRING	1	SWPA	
1	4854850601	POWER BUTTON	1	ABS BK	

20Q3



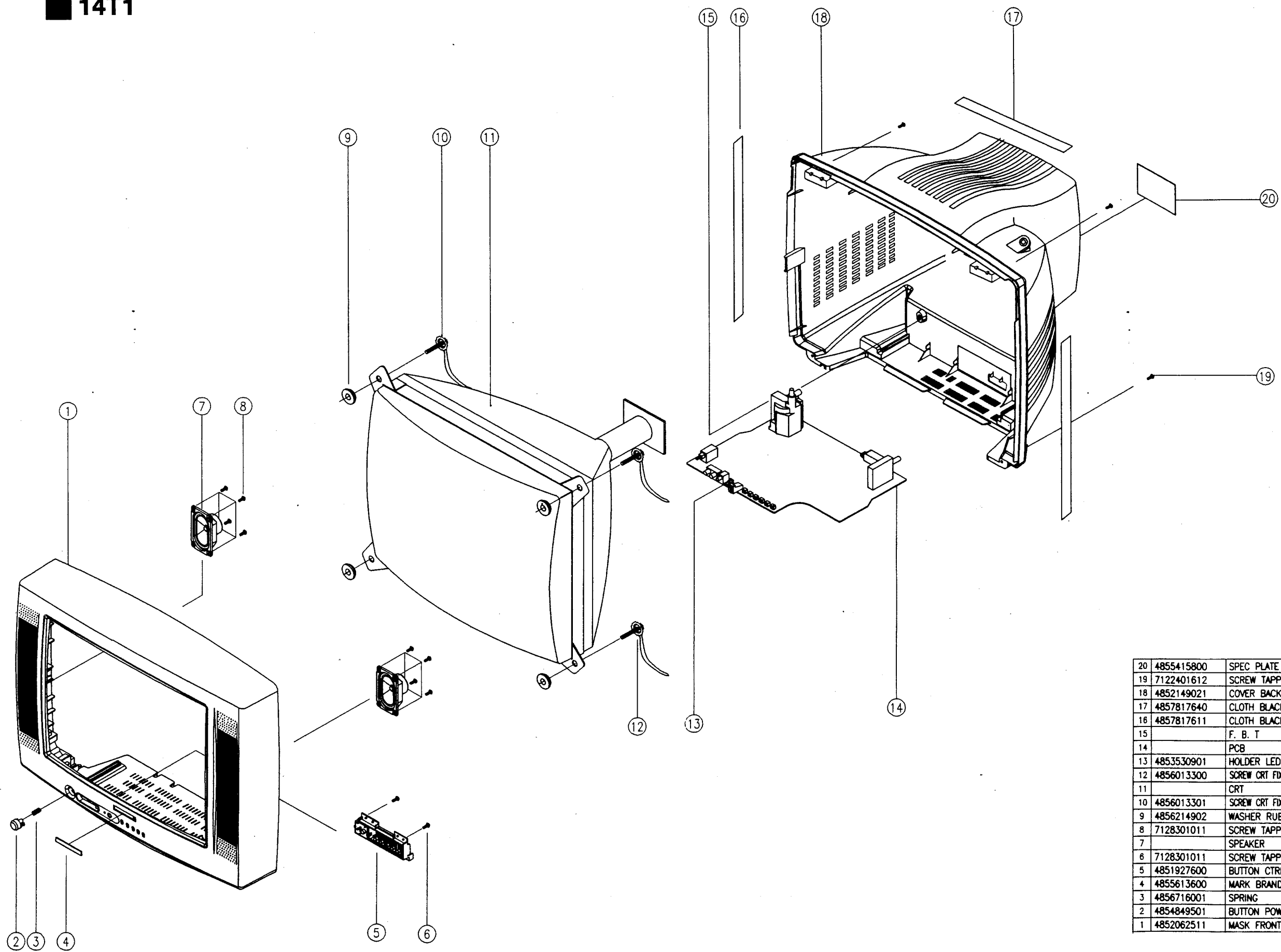
15	4855415800	SPEC PLATE	1	150 ART	P/E FILM	
14	7122401412	SCREW TAPPING	5	T2S TRS	4X16 MFZN BK	
13	4852147300	COVER BACK	1	FR HIPS	BK	
12	4857817610	CLOTH BLACK	2	FELT T0.7	L=300	
11	4857817610	CLOTH BLACK	1	FELT T0.7	L=300	
10	4856013300	SCREW CRT FIXING AS.	1	L=70mm		
9	4856013301	SCREW CRT FIXING AS.	1	L=140mm		
8	4852148500	WASHER RUBBER	1	CR T2.0		
7		MAIN PCB	1	CN-250		
6	7128301011	SCREW TAPPING	2	T2S WAS	3X10 MFZN	
5	4851925910	BUTTON CTRL AS	1	4934710+	5532300	
4	4852063301	MASK FRONT	1	HIPS BK		
3	4855615900	MARK BRAND	1	A1050P-H24	T0.4	
2	4856717900	SPRING	1	SWPA		
1	4854850001	POWER BUTTON	1	ABS BK		

21Q3



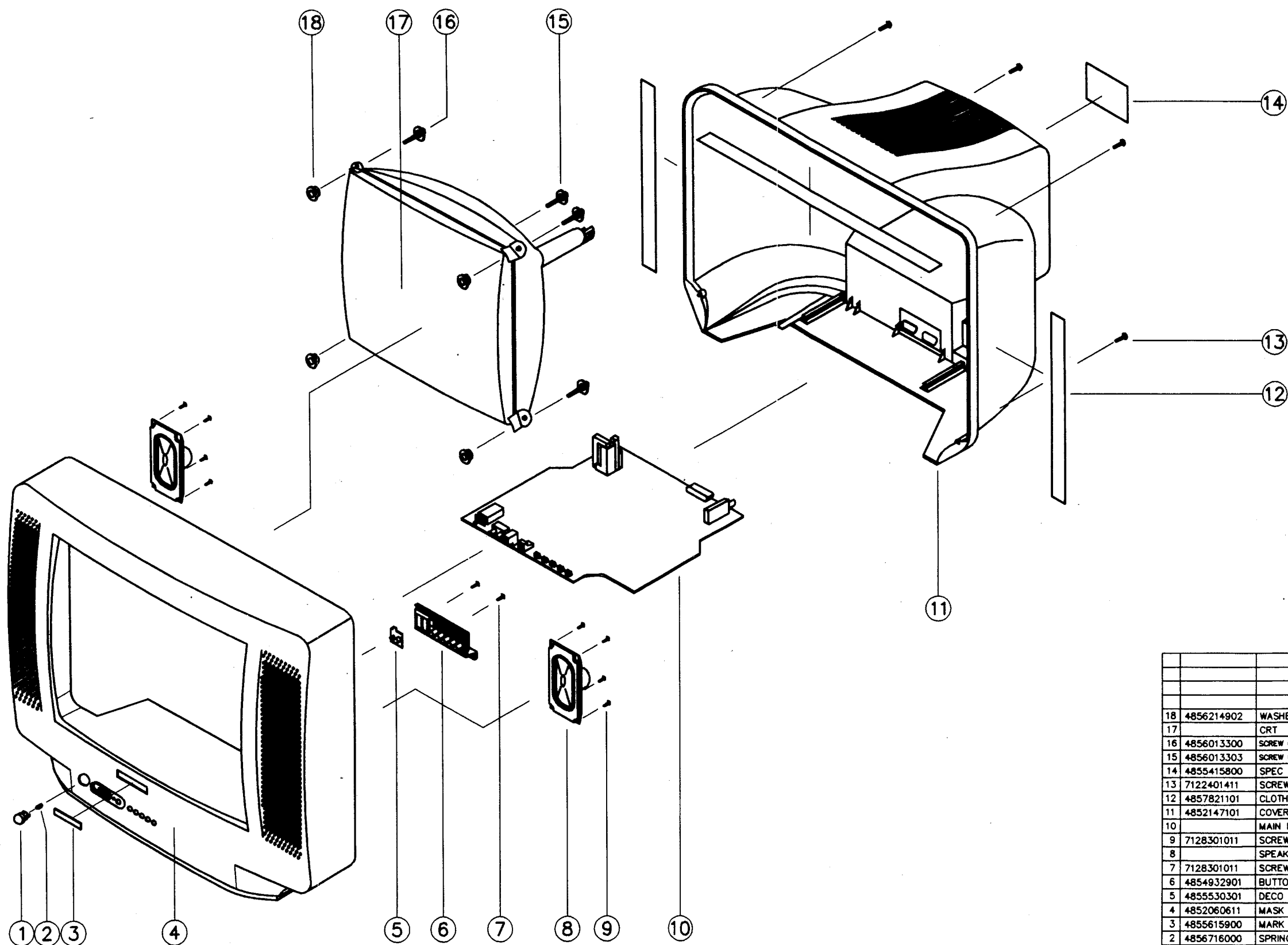
21	6520010100	STAPLE PIN	1	18M/M JDO	
20	4858213800	POLY BAG	1	P.E. FILM T0.06X250X350	
19	4858261300	PE FILM	1	T0.02X1200X1000	
18	4858050600	BOX CARTON	1	SW-2	
17	4858182100	PAD	1	EPS	
16	4855415800	SPEC PLATE	1	150 ART P/E FILM	
15	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK	
14	4852147901	COVER BACK	1	HIPS BK	
13	4857817610	CLOTH BLACK	3	FELT T0.7 L=300	
12	4856013300	SCREW CRT FIXING AS.	2	L=70mm	
11	4856013301	SCREW CRT FIXING AS.	2	L=140mm	
10	4852148500	WASHER RUBBER	4	CR T2.0	
9		MAIN PCB	1	CP-375	
8	4854934601	BUTTON	1	ABS BK	
7	4855532201	DECO SENSOR	1	PMMA	
6	7128301011	SCREW TAPPING	4	T2S WAS 3X10 MFZN	
5		SPEAKER	2		
4	4852063401	MASK FRONT	1	HIPS BK	
3	4855615900	MARK BRAND	1	A1050P-H24 T0.4	
2	4856717900	SPRING	1	SWPA	
1	4854850101	POWER BUTTON	1	ABS BK	

14T1



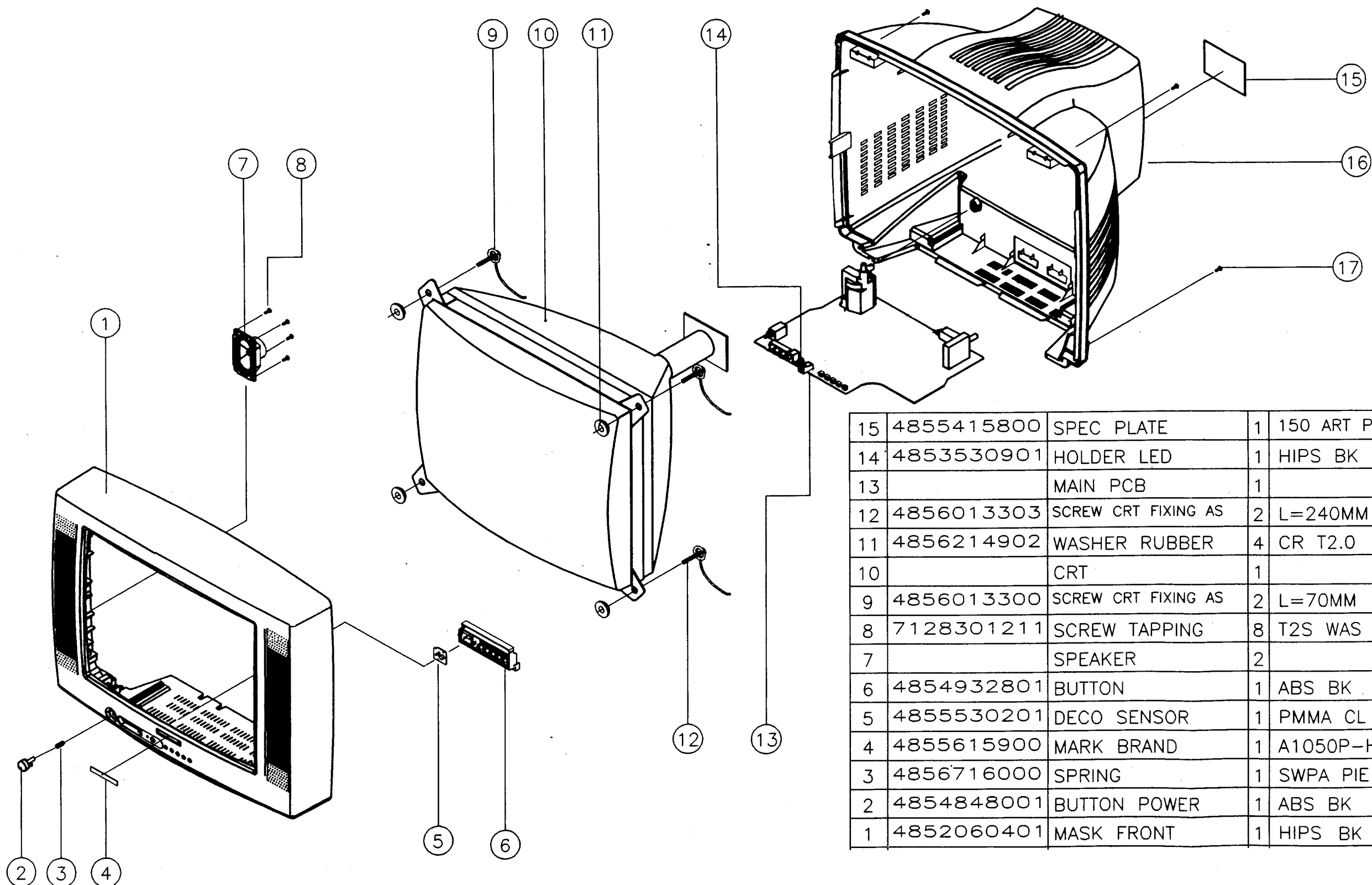
20	4855415800	SPEC PLATE	1	150ART P/E FILM(C/TV)	
19	7122401612	SCREW TAPPING	5	T2S TRS 4X16 WZIN BK	
18	4852149021	COVER BACK	1	HIPS BK	CORE"A3"
17	4857817640	CLOTH BLACK	1	FELT TO.7 L=100	
16	4857817611	CLOTH BLACK	2	FELT TO.7 L=200	
15		F. B. T			
14		PCB			CP-375
13	4853530901	HOLDER LED	1	FR HIPS BK	
12	4856013300	SCREW CRT FIXING AS	2	L = 80MM	
11		CRT	1	A34JLL90X01	
10	4856013301	SCREW CRT FIXING AS	2	L = 140MM	
9	4856214902	WASHER RUBBER	4	CR T2.0	
8	7128301011	SCREW TAPPING	8	T2S WAS 3X10 WZIN	
7		SPEAKER	2		
6	7128301011	SCREW TAPPING	2	T2S WAS 3X10 WZIN	
5	4851927600	BUTTON CTRL AS	1	4934101+55317(I)	
4	4855613600	MARK BRAND	1	COPPER TO.4	
3	4856716001	SPRING	1	SWPA PIE0.5	
2	4854849501	BUTTON POWER	1	ABS BK	
1	4852062511	MASK FRONT	1	HIPS BK	CORE"A3"

20T1



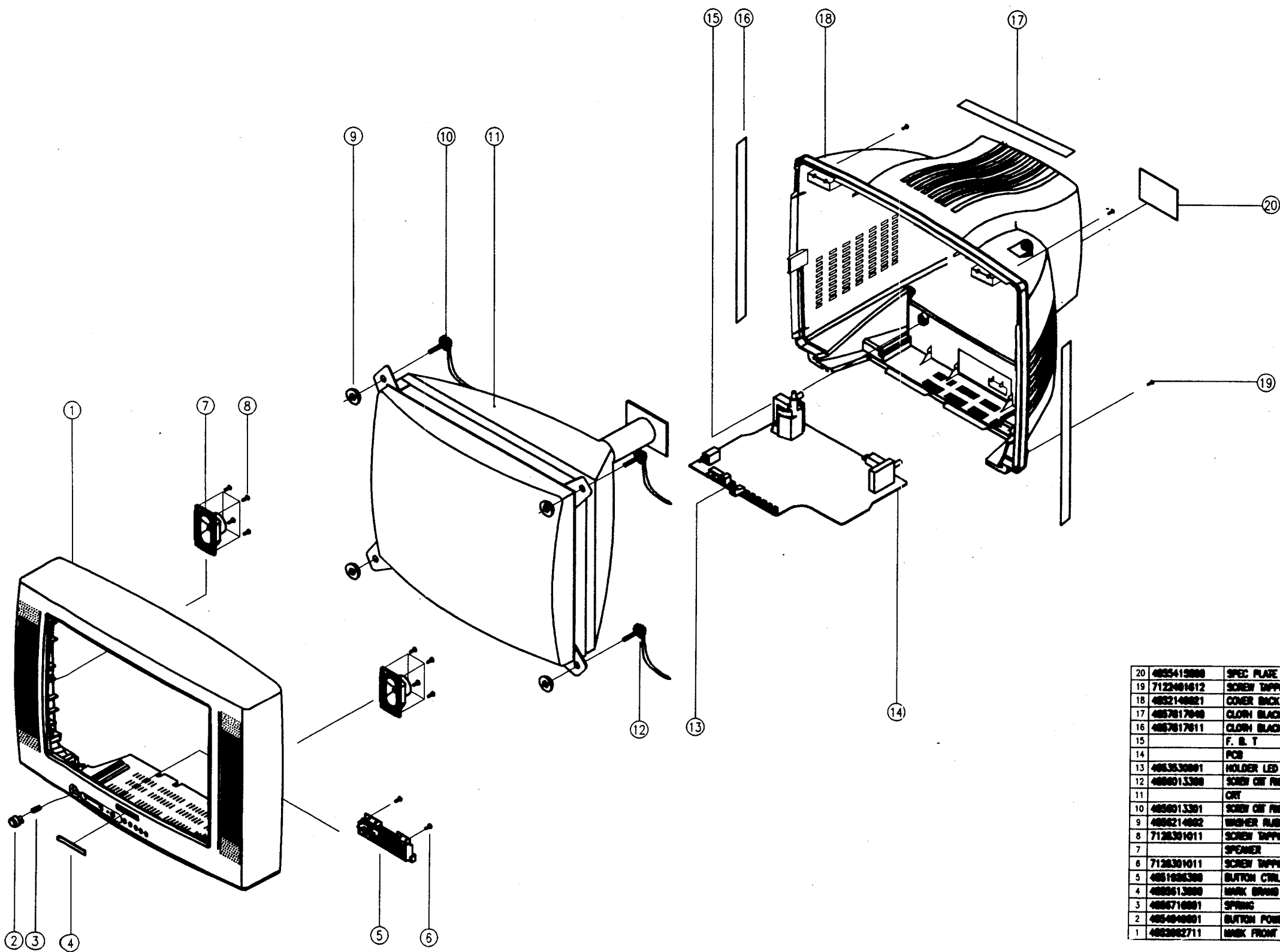
18	4856214902	WASHER RUBBER	4	CR T2/O
17		CRT	1	TUBE A'SSY
16	4856013300	SCREW CRT FIXING AS.	2	L=70mm
15	4856013303	SCREW CRT FIXING AS.	2	L=240mm
14	4855415800	SPEC PLATE	1	150ART P/E FILM
13	7122401411	SCREW TAPPING	5	T2S TTS 4X14 MFZN
12	4857821101	CLOTH BLACK	3	CLOTH L=300
11	4852147101	COVER BACK	1	HIPS BK
10		MAIN PCB A'SSY	1	PCB A'SSY
9	7128301011	SCREW TAPPING	8	T2S WAS 3X10 MFZN
8		SPEAKER	2	
7	7128301011	SCREW TAPPING	2	T2S WAS 3X10 MFZN
6	4854932901	BUTTON	1	ABS BK
5	4855530301	DECO SENSOR	1	PMMA
4	4852060611	MASK FRONT	1	HIPS BK
3	4855615900	MARK BRAND	1	AL0500-H24
2	4856716000	SPRING	1	SWPA
1	4854848101	BUTTON POWER	1	ABS BK

21T1

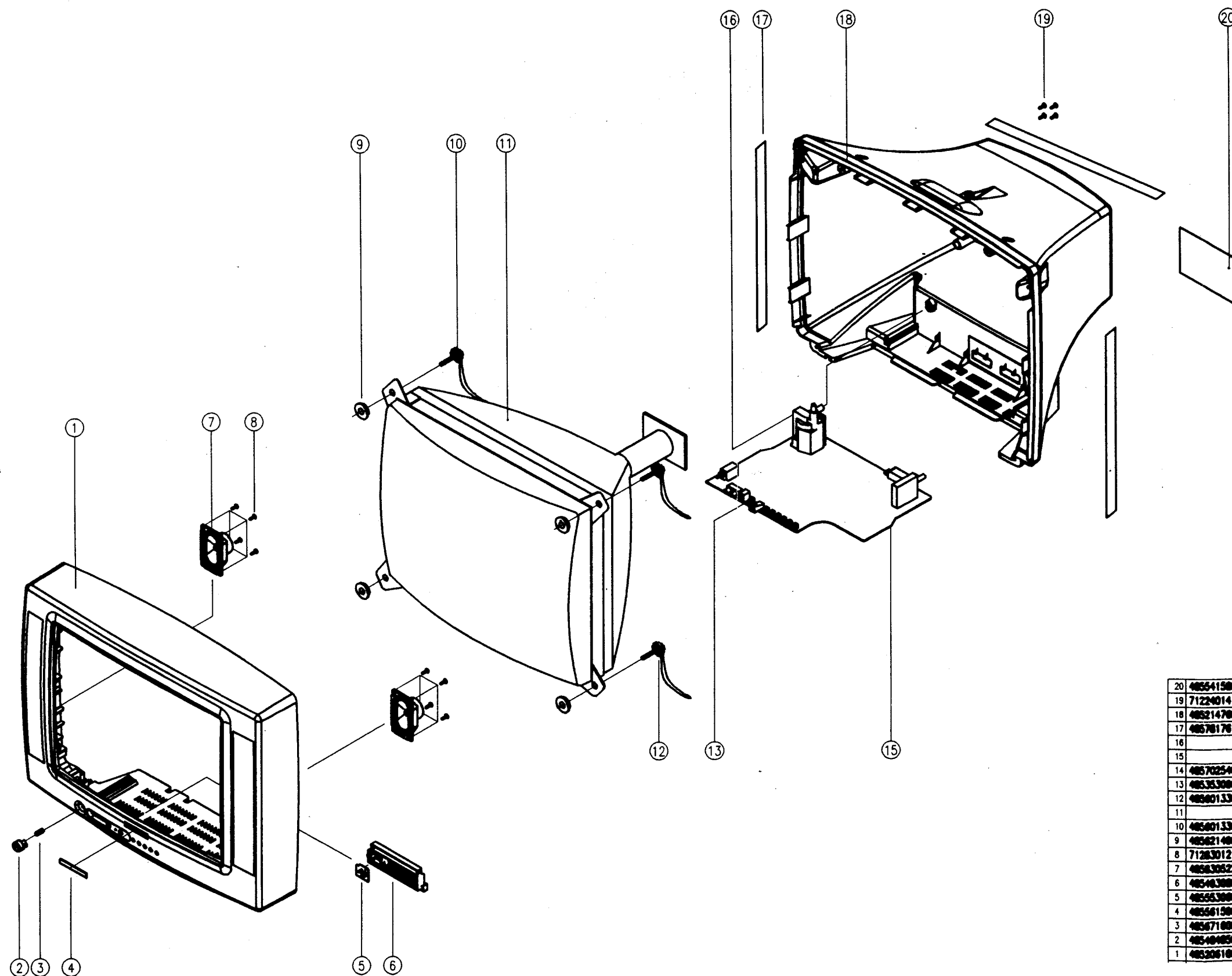


15	4855415800	SPEC PLATE	1	150 ART P/E FILM(C/TV)	
14	4853530901	HOLDER LED	1	HIPS BK	
13		MAIN PCB	1		CP-375
12	4856013303	SCREW CRT FIXING AS	2	L=240MM	
11	4856214902	WASHER RUBBER	4	CR T2.0	
10		CRT	1		
9	4856013300	SCREW CRT FIXING AS	2	L=70MM	
8	7128301211	SCREW TAPPING	8	T2S WAS 3X12 MFZN	
7		SPEAKER	2		
6	4854932801	BUTTON	1	ABS BK	
5	4855530201	DECO SENSOR	1	PMMA CL	
4	4855615900	MARK BRAND	1	A1050P-H24 T0.4	
3	4856716000	SPRING	1	SWPA PIE T0.5	
2	4854848001	BUTTON POWER	1	ABS BK	
1	4852060401	MASK FRONT	1	HIPS BK	

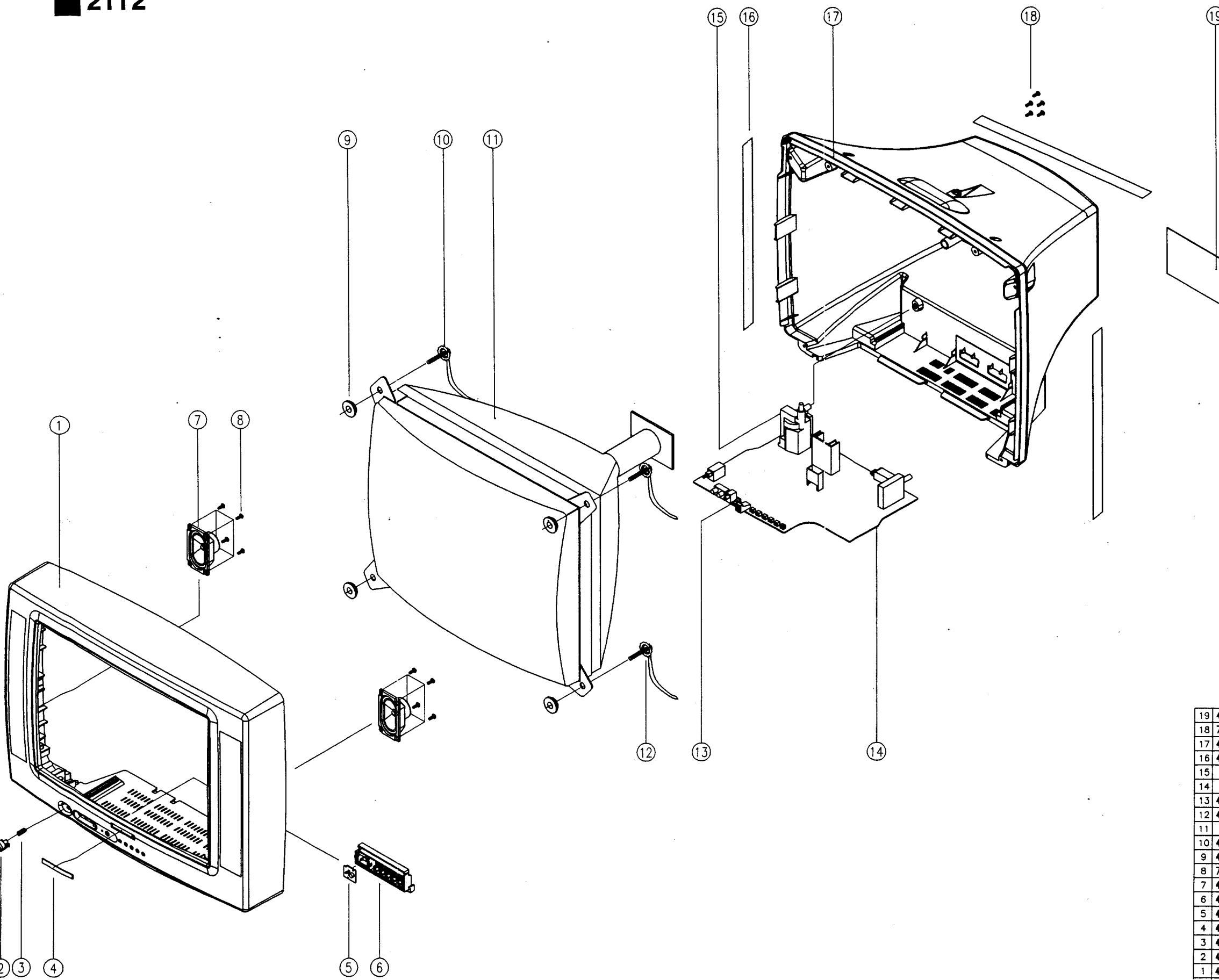
17	7122401412	SCREW TAPPING	4	T2S TRS 4X14 MFZN BK	
16	4852147002	COVER BACK	1	HIPS BK	



20	4855415800	SPEC PLATE	1	130ART P/E FILM(C/T)	
19	7122401612	SCREW TAPPING	5	T25 WRS 4X16 MF2N BK	
18	4852148821	COVER BACK	1	HPS BK	CORE "A"
17	4857817848	CLOTH BLACK	1	FELT 10.7 L=180	
16	4857817811	CLOTH BLACK	2	FELT 10.7 L=280	
15		F. B. T			
14		PCB			CP-375
13	4853530801	HOLDER LED	1	FR HPS BK	
12	4858013308	SCREW CRT RING AS	2	L = 80MM	
11		CRT	1	A34JL92H01	
10	4858013301	SCREW CRT RING AS	2	L = 140MM	
9	4858214882	WASHER RUBBER	4	CR T2.0	
8	7128301011	SCREW TAPPING	8	T25 WRS 3X10 MF2N	
7		SPEAKER	2		
6	7128301011	SCREW TAPPING	2	T25 WRS 3X10 MF2N	
5	4851886388	BUTTON CTRL AS	1	4834381+5531801	
4	4858613888	MARK BRASS	1	COPPER 10.4	
3	4858718881	SPRING	1	SWPA P100.5	
2	4854848881	BUTTON POWER	1	ABS BK	
1	4853882711	MARK FRONT	1	HPS BK	CORE "B"



20	4856415800	SPEC PLATE	1	150WRT P/E FILM(C/T)	
19	7122401412	SCREW TAPPING	4	T25 TRS 4X14 MFZN BK	
18	4852147801	COVER BACK	1	HPS BK	
17	4857817810	CLOTH BLACK	3	FELT T0.7 L=300	
16		F. B. T			
15		MAIN PCB			CP-375
14	4857025401	HEAT SINK	1	A105OP-H24 T2	
13	4853530801	HOLDER LED	1	FR HPS BK	
12	4858013302	SCREW CRT PINS AS	2	L=190MM	
11		CRT	1		
10	4858013300	SCREW CRT PINS AS	2	L=70MM	
9	4858214802	WASHER RUBBER	4	CR T2.0	
8	7128301211	SCREW TAPPING	8	T25 WRS 3X12 MFZN	
7	4858305220	SPEAKER	2		
6	4854838801	BUTTON	1	ABS BK	
5	4855538801	DECO SENSOR	1	PMMA CL	
4	4855615800	MARK BRAND	1	A105OP-H24 T0.4	
3	4856718800	SPRING	1	SHPA PEO.5	
2	4854848501	BUTTON POWER	1	ABS BK	
1	4853061801	MASK FRONT	1	HPS BK	



19	4855415800	SPEC PLATE	1	150ART P/E FILM(C/TV)	
18	7122401612	SCREW TAPPING	5	T2S TRS 4X16 MFZN BK	
17	4852147501	COVER BACK	1	HIPS BK	
16	4857817610	CLOTH BLACK	3	FELT TO.7 L=300	
15		F. B. T			
14		PCB			
13	4853530901	HOLDER LED	1	FR HIPS BK	
12	4856013302	SCREW CRT FIXING AS	2	L=190MM	
11		CRT	1		
10	4856013300	SCREW CRT FIXING AS	2	L=70MM	
9	4856214901	WASHER RUBBER	4	CR T1.0	
8	7128301211	SCREW TAPPING	8	T2S WAS 3X12 MFZN	
7	4858305220	SPEAKER	2		
6	4854930701	BUTTON	1	ABS BK	
5	4855530701	DECO SENSOR	1	PMMA C.L	
4	4855615900	MARK BRAND	1	A1050P-H24 TO.4	
3	4856716000	SPRING	1	SWPA PIE0.5	
2	4854848401	BUTTON POWER	1	ABS BK	
1	4852060901	MASK FRONT	1	HIPS BK	